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No. 85-.....

IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

SMITH INTERNATIONAL, INC.,

Petitioner,

v.

HUGHES TOOL COMPANY,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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QUESTIONS PRESENTED

1. Is it consistent with the public interest in seeing that patent monopolies spring from backgrounds free from fraud or other inequitable conduct to hold that the doctrine of law of the case bars consideration of evidence that a patent was obtained by fraud on the Patent Office?

2. If an appellate court reverses a decision of a district court holding a patent invalid on three grounds, does the appellate court by necessary implication reject a fourth possible ground of invalidity, though the appellate court never mentions that ground and the district court had made no conclusion on it?

3. Does Rule 60(b) of the Federal Rules of Civil Procedure, contrary to its express terms and contrary to the Advisory Committee's guidelines, apply to "interlocutory" as well as "final" orders?

PARTIES TO THE PROCEEDING

The party Smith International, Inc. has the following affiliates, other than wholly-owned subsidiaries: Alasi, S.A. de C.V., Mexico; Smith International Arabia, Saudi Arabia; Barrenas de Mexico, Mexico; Bosi, S.A. de C.V., Mexico; Smith Brocas, C.A., Venezuela; Drilling Tools Services Sdn. Bhd., Singapore; Smith International Gulf Services Limited, (Dubai); Smith International Sdn. Bhd., Malaysia; McEvoy Egyptian Equipment Company, Egypt; Servicios y Manufacturas Industriales Talara, S.A., Peru; Sidem, S.A., Mexico; SRI Timor Oilfield Supplies & Equipment, Malaysia; Syarikat Rajah Sendirian Berhad, Brunei; and Zasi, S.A., Mexico.

The party Hughes Tool Company has the following affiliates, other than wholly-owned subsidiaries: Hughes Tool Company, C.A., Venezuela; Hughes WKM do Brasil Equipamentos Industriais LTDA, Brazil; Alea Company, Limited, Nigeria; APSCO (Asia) Ptd. Limited, Singapore; Associated Petroleum Supply (Hong Kong) Limited; Brown-Foraid Oil Tools (U.A.E., Ltd., Bermuda; and Brown Oil Tools de France S.A.R.L., France.

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v.

HUGHES TOOL COMPANY,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Smith International, Inc. respectfully prays that a writ of certiorari issue to review the judgment entered by the Court of Appeals for the Federal Circuit in consolidated Appeal Nos. 84-1094 and 84-1767.

OPINIONS BELOW

The decision of the Court of Appeals for the Federal Circuit of which review is sought is reported at 759 F.2d 1572. It is set out in the Appendix. (A. 1-16).[1] It affirmed two unpublished interlocutory decisions in 1984 by the District Court for the Central District of California, a memorandum by District Judge Lucas (A. 67-75) and an order from the bench by District Judge Hupp. (A. 76-82).

The following opinions in the courts below are also relevant: an unpublished final decision in 1979 by District Judge Firth of the Central District of California (A. 17-31); the reversal of that

[1] All reference to the Appendix will be by use of the letter "A." followed by a page number.

decision in 1982 by the Ninth Circuit, reported at 664 F.2d 1373 (A. 32-40) (hereinafter "*Hughes I*"); an unpublished interlocutory decision in 1982 by Judge Lucas (A. 41-48); and the reversal of that decision in 1983 by the Federal Circuit, reported at 718 F.2d 1573 (A. 49-66) (hereinafter "*Hughes II*").[2]

JURISDICTION

The judgment of the Federal Circuit is dated and was entered April 30, 1985. The jurisdiction of this Court is invoked under 28 U.S.C. §§ 1254(1) and 2101(c).

STATUTES AND RULES INVOLVED

The texts of 35 U.S.C. §§ 102, 103, 112, and 282 and of Rule 60(b) of the Federal Rule of Civil Procedure are set out in the Appendix. (A. 88-93).

STATEMENT OF THE CASE

The focus of the present petition is the Federal Circuit's reliance on the doctrine of law of the case as barring consideration of certain issues. To understand what the Federal Circuit did, a brief history of the litigation is necessary.

Proceedings Before the United States Patent and Trademark Office.

This case arises out of a patent held by Hughes on a sealing system for oil well drilling bits, Patent No. 3,397,928 (the " '928 patent"). (SA. 1-8).[3] During proceedings before the Patent Office Examiner, Hughes submitted two sets of *ex parte* affidavits. The first set of affidavits were executed by Fred H.

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[2] The designations "*Hughes I*" and "*Hughes II*" refer to prior interlocutory appellate decisions in this case. These designations are employed to emphasize that Hughes was the appellant in each of those prior appeals. The present petition is from the first appeal noticed by Smith in more than 10 years of litigation.

[3] The designation "SA" refers to the separately presented Supplemental Appendix authorized by Rule 33 for patent documents.

McElya, a Hughes design engineer, and by John Wilshire, a drilling rig operator. These affidavits failed to convince the Examiner to issue the patent. A second set was then submitted by Hughes executed by William A. Kistler, Jr., Hughes's Vice President of Manufacturing, and Edward M. Galle, the inventor. After the second set was submitted, the Patent Examiner issued the '928 patent.

1979 District Court Decision.

In 1979, Judge Firth entered a final decision holding the patent invalid under 35 U.S.C. §§ 102, 103, and 112. During trial, Smith introduced evidence concerning Hughes's *first* set of affidavits submitted to the Patent Examiner to establish that the patent was also invalid due to fraud. Judge Firth made fact findings that the presentation by Hughes of the *first* set of affidavits "did not, in some material respects, meet the applicant's uncompromising duty to make a full and fair disclosure of all facts which may affect patentability of his invention" (A. 25; Fact Finding Nos. 29-31), but refused to decide whether these fact findings amounted to fraud. (A. 30; SA 26; striking Smith's proposed Conclusion of Law No. 3).[4]

Hughes I: 1982 Ninth Circuit Decision.

Hughes appealed Judge Firth's decision holding the patent invalid under 35 U.S.C. §§ 102, 103, and 112 to the United States Court of Appeals for the Ninth Circuit. There being no decision adverse to Smith (such as one holding that the patent had not been procured by fraud), Smith did not cross-appeal.

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[4] The basis for federal jurisdiction in the United States District Court for the Central District of California was 28 USC § 1338. Judge Firth modified Smith's post-trial proposed findings of fact and conclusions of law by handwritten notations and adopted those findings and conclusions as modified. Pursuant to instructions from the Clerk of the Court, a retyped version of Judge Firth's findings and conclusions is presented in the Appendix at pages 17-31 and a photocopy of the marked original is presented in the Supplemental Appendix at pages 9-28.

At pages 44 and 45 of its 47-page responding brief to the Ninth Circuit, Smith had a one-and-a-half page section entitled "H. The Presumption of Validity is Dissipated in the Face of the Record Before This Court". In that section, Smith argued that the presumption of validity is dissipated if prior art was not brought to the attention of the Patent Office Examiner or if the Patent Office was misled about the true import of prior art references. This was followed by one sentence discussing possible invalidity due to fraud:

> While the district court did not hold the seal ('928) patent invalid on the basis of those findings (see CR 20, p. 17), it is submitted that this Court should do so on the separate ground of fraud on the Patent Office. *Monolith Portland Midwest Co.* v. *Kaiser Aluminum Chemical Corp.*, 407 F.2d 288, 294 (9th Cir. 1969).

The Ninth Circuit expressly reversed the District Court's conclusions that the '928 patent was invalid under 35 U.S.C. §§ 102, 103, and 112, but made no statement concerning possible invalidity due to fraud. (A. 38-40; 664 F.2d at 1376-77). The Ninth Circuit remanded the case for further proceedings on Hughes's claim for infringement without commenting on the merits of that claim. (A. 40; 664 F.2d at 1377). In its petition for rehearing of the Ninth Circuit's decision, Smith made no reference to fraud.

Hughes II: 1983 Federal Circuit Decision.

In December of 1982, District Judge Lucas (successor in this litigation to District Judge Firth) denied Hughes's request to enter a preliminary injunction, reasoning that the scope of infringement was too uncertain to justify imposition of injunctive relief. (A. 45-48). No arguments were made by either party concerning Smith's defenses of invalidity due to fraud.

Hughes appealed Judge Lucas's decision refusing to enter injunctive relief to the Federal Circuit. No arguments were

made by either party concerning invalidity due to fraud or unenforceability due to inequitable conduct.

The Federal Circuit reversed and remanded with instructions to enter a preliminary injunction enjoining Smith from infringing claim 1 of the patent, reasoning that because Smith had earlier admitted to some type of infringement, there was a basis for imposing injunctive relief. In the course of its opinion, the Federal Circuit briefly discussed the arguments under 35 U.S.C. §§ 102, 103, and 112 made to the Ninth Circuit in *Hughes I*, and concluded: "the validity of the Hughes patents has been adjudicated by a competent appellate court, which we *assume* considered all possible grounds for invalidating the patents, and yet it rejected them all." (A. 61; 718 F.2d at 1579) (emphasis supplied). The defense of fraud was not mentioned.

1984 District Cou t Decisions.

On remand from *Hughes II*, District Judge Lucas entered a preliminary injunction against infringement of claim 1 of the patent. Thereafter, Smith moved to dissolve the preliminary injunction due to Hughes's fraud and inequitable conduct[5] before the Patent Office Examiner, reciting Judge Firth's 1979 Fact Findings left undisturbed by the Ninth Circuit in *Hughes I* and new evidence not considered by Judge Firth regarding the

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[5] Smith has consistently taken the position that, as 35 U.S.C. § 282 shows, there is a distinction between invalidity and unenforceability of a patent and that fraud goes to the first and inequitable conduct to the second. Prior to the initial trial in the District Court, Judge Firth expressly deferred issues relating to infringement "to an accounting proceeding, if such proceeding takes place." Thus, the Ninth Circuit could not have made a determination about inequitable conduct and Smith could not now be barred by law of the case from attempting to show unenforceability on that ground. The Federal Circuit held to the contrary. (A. 10-11; 759 F.2d at 1577-1578). Although Smith believes the court below was wrong on this point, it does not press the point now.

first set of affidavits filed by Hughes. Judge Lucas, in an unpublished memorandum opinion dated April 4, 1984, refused to dissolve the preliminary injunction reasoning that validity of the patent had been established for all purposes by the Ninth Circuit in *Hughes I* and that upon application of Rule 60(b)(2) of the Federal Rules of Civil Procedure to the prior interlocutory decision of the Ninth Circuit, Smith's new evidence regarding the first affidavits was not "newly discovered." (A. 67-75). Smith noticed Appeal No. 84-1094 from this refusal to dissolve to the Federal Circuit. This was the first appeal taken by Smith during the litigation.

In the summer of 1984, during further discovery on the infringement issue and during the pendency of Appeal No. 84-1094, Smith, for the first time, discovered evidence of fraud and inequitable conduct practiced by Hughes in the *second* set of affidavits filed by Hughes with the Patent Office Examiner. Thereafter, Smith again moved to dissolve the preliminary injunction reciting this new and substantially different evidence, which, without question, has never been considered by any court. In September of 1984, District Judge Hupp (as successor to Judge Lucas) refused to dissolve the preliminary injunction giving his reasons from the bench and entering his decision as a minute order in the docket entries of the court. (A. 76-82). Like Judge Lucas, Judge Hupp reasoned that the validity and enforceability of the patent had been established for all purposes by the Ninth Circuit in *Hughes I* and that upon application of Rule 60(b)(2) to the prior interlocutory decision of the Ninth Circuit in *Hughes I*, Smith's new evidence of Hughes's fraud and inequitable conduct practiced by Hughes's *second* set of affidavits was not "newly discovered." Smith noticed Appeal No. 84-1767 from this second refusal to dissolve to the Federal Circuit. Although the two appeals were separately briefed, these two appeals were consolidated for purposes of oral argument and decision. (A. 83).

1985 Federal Circuit Decision.

The Federal Circuit affirmed the denial of Smith's motions to dissolve the preliminary injunction. It held that all issues with respect to the validity and enforceability of the '928 patent and the fact of infringement of it have been resolved in favor of Hughes. The only issues still open, in its view, are the extent of infringement, the amount of damages, and the scope of any injunctive relief. (A. 16; 759 F.2d at 1580).

In reaching this decision, the Federal Circuit held that the Ninth Circuit decision in *Hughes I* had, by necessary implication, decided the issue of fraud against Smith. (A. 6-11; 759 F.2d at 1576-1578). It rejected the argument that public policy requires that all manner of misconduct before the Patent Office should be fully considered whenever discovered during interlocutory proceedings, saying that the application of the doctrine of law of the case "cannot depend upon the nature of the issue that a party seeks to relitigate." (A. 11; 759 F.2d at 1578). Finally, it held that in determining whether the "substantially different" evidence exception to the law-of-the-case doctrine is applicable, the standard set out in Civil Rule 60(b)(2) for relief from a final judgment should be used to measure whether the new evidence is "substantially different." (A. 11-13; 759 F.2d at 1578-1579).

REASONS FOR GRANTING THE WRIT

At first blush, it is difficult to imagine a less likely candidate for certiorari than the present case. It is a patent case, and the availability since 1982 of unified appellate review of patent litigation in the Federal Circuit means that it should rarely be necessary for this Court to hear a patent matter. It involves the doctrine of law of the case, and while that doctrine is one of general applicability, it has been invoked by the courts below in this litigation in a highly individual set of circumstances.

Appearances, however, are often misleading. In truth, this case presents issues of great importance, both for the integrity of the patent system and for the fair and efficient administration of the courts. The decision of the Federal Circuit departs in major respects from what this Court has said. Review here is required to provide guidance for all of the lower federal courts in all kinds of litigation in the future.

This petition is directed solely to fundamental questions of proper federal procedure. Although the subject of the litigation is a United States patent on a sealing system for oil well drilling bits, no questions of technology or of substantive patent law are presented. Nevertheless, the fact that the issues arise in a patent context is not irrelevant, because the public interest when patents are in question raises considerations that are not present in purely private litigation.

The decision below, if it is allowed to stand, establishes finally the validity and enforceability of a key patent held by Hughes Tool Company. For infringement of that patent, Hughes is seeking damages from Smith of one billion two hundred million dollars ($1,200,000,000.00). In addition, on March 11, 1985, the District Court for the Northern District of Texas awarded Hughes $132,094,430.92 in damages and interest against Dresser Industries for infringement of the same patent. If the patent is valid and enforceable, it is hardly this Court's concern that Hughes is in a position to do grave, if not indeed mortal,

injury to two of its three competitors in drilling bits. That would be the price they must pay for infringing the patent. But if the patent is not valid, to allow such results to stand would be a monstrous injustice.

Smith seriously contends that the patent is invalid and cannot be enforced. Smith believes that Hughes obtained the patent by practicing fraud on the Patent Office. Smith contends that the two sets of affidavits submitted to the Patent Office by Hughes had material misstatements and omissions and that no patent would have issued had the Patent Office known all of the facts that have now come to light.

Smith may be right or wrong in thinking that it can prove all of this. That is not now the issue. The issue now is whether Smith should be given an opportunity to try. The stark fact is that the patent has now been held to be valid and enforceable although no court has ever considered on its merits the evidence of fraud and announced that Smith is wrong and that Hughes was not guilty of fraud. If the decision below stands, Hughes will luxuriate in the benefits of a lucrative monopoly without any judicial resolution on the merits of the serious contention that it obtained its patent by fraud.

The only consideration of any kind of the claim of fraud was by Judge Firth in the initial proceeding in the District Court. He found as a fact that Hughes "did not, in some material respects, meet the applicant's uncompromising duty to make a full and fair disclosure of all facts which may affect the patentability of his invention" (A. 25), but, having found the patent invalid on three other grounds, he did not make a conclusion on the claim of fraud on the Patent Office. The Ninth Circuit, reversing in *Hughes I* (A. 32-40; 664 F.2d 1373), never mentioned the claim of fraud or the findings of less than full and fair disclosure. Its three-page opinion discusses only the three grounds on which Judge Firth had held the patent invalid.

Since that time all courts have steadfastly refused to consider either the evidence about the first set of affidavits, which had been the basis of Judge Firth's findings, or evidence that has only recently come to light and that shows that the second set of affidavits also contained material misstatements and omissions. The two judges in the District Court in 1984 and the Federal Circuit in the decision of which review is sought have held that the Ninth Circuit decided the issue of fraud against Smith in *Hughes I* and that the doctrine of law of the case bars any new examination of the issue.

In so holding, the courts below have misread the Ninth Circuit's decision and misunderstood the law-of-the-case doctrine. The first would not in itself justify review here. The second does, because law of the case is a doctrine that applies in every kind of litigation and it is important that it be properly understood and applied. In a time of intense time and docket pressure, the doctrine is a useful protection for "both court and parties against the burdens of repeated reargument by indefatigable diehards." 18 Wright, Miller & Cooper, *Federal Practice and Procedure: Jurisdiction* § 4478, at 790 (1981). Nevertheless, it is a rule of practice, not an inexorable command, and cannot be used to deprive a party of a fair day in court.

The court below treated law of the case as if it were essentially indistinguishable from res judicata (or claim and issue preclusion in the new terminology). The rules of res judicata are applicable only when a final judgment is rendered, *Restatement Second of Judgments* § 13 (1982), and there is a very strong interest in preserving the finality of judgments. For that reason, res judicata is not a mere rule of practice or procedure. It is "a complex body of law" that does not yield to considerations of fairness or of "simple justice," since it "serves vital public interests beyond any individual judge's ad hoc determination of the equities in a particular case." *Federated Department Stores, Inc.* v. *Moitie*, 452 U.S. 394, 401 (1981).

Law of the case is wholly different. It does not involve preclusion by final judgment, but instead regulates judicial affairs before final judgment. 18 Wright, Miller & Cooper, *supra*, § 4478, at 788. Because the element of finality is not present, quite different rules apply to the law-of-the-case doctrine than to res judicata.

> As most commonly defined, the doctrine posits that when a court decides upon a rule of law, that decision should continue to govern the same issues in subsequent stages in the same case . . Law of the case directs a court's discretion, it does not limit the tribunal's power.

Arizona v. *California*, 460 U.S. 605, 618 (1983). The court below erred in three different respects in its understanding and application of the discretionary doctrine of law of the case.

First, the court below improperly held that the Ninth Circuit's decision was law of the case on fraud although the Ninth Circuit had not decided the fraud issue. "The doctrine of law of the case comes into play only with respect to issues previously determined." *Quern* v. *Jordan*, 440 U.S. 332, 347 n.18 (1979). Res judicata applies to elements of a claim even though they were not presented or decided in the prior action. Law of the case is limited to issues that were actually decided, either expressly or by necessary implication. *Schultz* v. *Onan Corp.*, 737 F.2d 339, 345 (3rd Cir. 1984); *Maggard* v. *O'Connell*, 703 F.2d 1284, 1289 (D.C. Cir. 1983); *Morrow* v. *Dillard*, 580 F.2d 1284, 1290 (5th Cir. 1978). The doctrine "does not encompass issues presented for decision but left unanswered by the appellate court." *Pegues* v. *Morehouse Parish School Board*, 706 F.2d 735, 738 (5th Cir. 1983), and "a careful reading" of a court's opinion is necessary to determine what issues were actually decided. *Gertz* v. *Robert Welch, Inc.*, 680 F.2d 527, 533 (7th Cir. 1982).

The Federal Circuit paid lip service to that limitation (A. 8-9; 759 F.2d at 1577), but did not apply it. It is undisputed that the

Ninth Circuit did not decide anything about fraud "expressly." It is neither discussed nor alluded to at any point in the opinion. The court below thought that the Ninth Circuit had decided the fraud issue against Smith "by necessary implication." (A. 8; 759 F.2d at 1577). This disregards clear pronouncements of this Court.

If an appellate court affirms the decision of a lower court, it necessarily rejects all of the grounds appellant has presented for reversal. But if the appellate court reverses, it need not pass on every issue in the case.

> When a case is presented to an appellate court it is not obliged to consider and decide all the questions then suggested or which may be supposed likely to arise in the further progress of the litigation. If it finds that in one respect an error has been committed so substantial as to require a reversal of the judgment, it may order a reversal without entering into any inquiry or determination of other questions. While undoubtedly an affirmance of a judgment is to be considered an adjudication by the appellate court that none of the claims of error are well founded, — even though all are not specifically referred to in the opinion, — yet no such conclusion follows in case of a reversal. It is impossible to foretell what shape the second trial may take or what questions may then be presented. Hence the rule is that a judgment of reversal is not necessarily an adjudication by the appellate court of any other than the question in terms discussed and decided.

Mutual Life Insurance Co. v. *Hill*, 193 U.S. 551, 553-554 (1904). *Accord: Chas. Wolff Packing Co.* v. *Court of Industrial Relations of Kansas*, 267 U.S. 552, 562 (1925). The Federal Circuit has said that the Ninth Circuit "necessarily must have" done (A. 8; 759 F.2d at 1577) what this Court says "is not necessarily" done in a reversal.

Of course the Ninth Circuit, had it chosen to do so, could have decided the issue. That court could have said that it had also considered Smith's challenge to the patent on the ground of

fraud, even though the District Court had not reached that ground, and that it found that challenge also to be without merit. If the Ninth Circuit had done that, then the issue would have been actually decided and the prerequisite to application of law of the case would have been satisfied. But the Ninth Circuit was silent on the subject.

It is equally clear that, as this Court pointed out in the *Mutual Life* case, the Ninth Circuit could have reversed without deciding the fraud issue. It could have said that Smith had also challenged the patent on the ground of fraud, but that since the District Court had not made a conclusion on that issue, the appellate court would leave that to be determined on remand. If the Ninth Circuit had done that, there could be no basis for invoking law of the case.

In concluding that an opinion that was silent about fraud had necessarily decided the issue against Smith, the court below thought it important that one sentence in Smith's brief had suggested that the Ninth Circuit should find the patent invalid because of fraud. (A. 8; 759 F.2d at 1576-1577). In fact, this adds nothing. "Certainly omissions do not constitute a part of a decision and become the law of the case, nor does a contention of counsel not responded to." *Hartford Life Insurance Co.* v. *Blincoe*, 255 U.S. 129, 136 (1921). The passing reference to fraud in the brief is a classic example of "a contention of counsel not responded to."

The Federal Circuit relied also on the fact that at the end of its brief opinion, limited wholly to the three grounds on which the District Court had found the patent invalid, the Ninth Circuit began its two-sentence Conclusion by saying: "The judgment is reversed, and Patents '928 and '195 are declared to be valid." (A. 40; 664 F.2d at 1377). The difficulty with reading anything into this is that, as the court below has recently said, "a court never 'declares' a patent valid." *Envirotech Corp.* v. *Al George, Inc.*, 730 F.2d 753, 762 (Fed. Cir. 1984). The Federal

Circuit thought it was able to overcome even that difficulty. "Although the language the Ninth Circuit used may have been infelicitous, its meaning was clear." (A. 9; 759 F.2d at 1577). But just as the Ninth Circuit itself holds that its dicta in an earlier opinion is not part of the law of the case, *Russell* v. *C.I.R.*, 678 F.2d 782, 785 (9th Cir. 1982), so too its "infelicitous language" cannot be law of the case for what it did not say. There are three possible explanations for that sentence in the Ninth Circuit's opinion: (1) the Ninth Circuit meant exactly what it said and was unaware that, as a matter of law, it cannot declare a patent valid; (2) the Ninth Circuit used a very odd form of words to say that the trial court was in error in finding the patent invalid on the three grounds on which that court had relied and that the Ninth Circuit had discussed in its opinion; or (3) the Ninth Circuit used an even odder form of words to say that not only was Judge Firth in error, for reasons it had discussed, in finding the patent invalid on three grounds, but it had also considered and rejected a fourth ground of challenge to the patent on which Judge Firth had made no conclusion and about which the appellate court had said not a word. Perhaps a soothsayer or a psychiatrist could deduce that the third of these is what the Ninth Circuit "necessarily" meant, but law of the case cannot rest on so shaky a foundation.

The two other respects in which the Federal Circuit erred in its understanding and application of the law-of-the-case doctrine can be stated much more briefly. Even if the Ninth Circuit's decision was law of the case on the ground of fraud, only the first set of affidavits presented to the Patent Office were in issue in 1982 when the Ninth Circuit made its decision. The evidence that the second set of affidavits also were fraudulent did not come to light until 1984, when depositions were taken in an action initiated by Hughes against Smith for contempt and infringement. The rule of law of the case does not apply if "the evidence on a subsequent trial was substantially different."

Perkin-Elmer Corp. v. *Computervision Corp.*, 732 F.2d 888, 900 (Fed. Cir. 1984); *Johnson* v. *Bernard Insurance Agency, Inc.*, 532 F.2d 1382, 1384 (D.C. Cir. 1976); *White* v. *Murtha*, 377 F.2d 428, 432 (5th Cir. 1967).

The evidence about the second set of affidavits was "substantially different" from the evidence about the first set of affidavits. But the Federal Circuit held that the standard for this exception to law of the case is found in Civil Rule 60(b)(2), which allows relief from a final judgment for "newly discovered evidence which by due diligence could not have been discovered in time to move for a new trial under Rule 59(b)." The law-of-the-case doctrine, the Federal Circuit said, "serves the same objective as the 'newly discovered' requirement in Rule 60(b)(2)." (A. 13; 759 F.2d at 1579). But Rule 60(b) was amended in 1948 to insert the word "final," and this was done, the Advisory Committee Note to the amendment says, to emphasize that "interlocutory judgments are not brought within the restrictions of the rule, but rather they are left subject to the complete power of the court rendering them to afford such relief from them as justice requires." The difference between res judicata and law of the case is the difference between a final judgment and interlocutory proceedings. Importing Rule 60(b)(2) into law of the case hopelessly blurs that distinction and ignores the compelling considerations of policy that require that great importance be attached to the element of finality.

Finally, the Federal Circuit explicitly rejected the argument that the public interest in protecting the integrity of the patent-issuing process and preventing the enforcement of patents secured by fraud should be taken into account, saying that the application of law of the case "should not and cannot depend upon the nature of the issue that a party seeks to relitigate." (A. 11; 759 F.2d at 1578). In doing so, it ignored what this Court has said about law of the case and about the public interest in patents.

The statement by the Federal Circuit just quoted shows that it has not heeded the teaching of this Court that law of the case, unlike res judicata, is a doctrine of discretion and not a limit on the court's power. *Arizona* v. *California*, 460 U.S. 605, 618 (1983). It has also not heeded this Court's strongly-held doctrine that "[t]he far-reaching social and economic consequences of a patent . . . give the public a paramount interest in seeing that patent monopolies spring from backgrounds free from fraud or other inequitable conduct and that such monopolies are kept within their legitimate scope." *Precision Instrument Manufacturing Co.* v. *Automotive Maintenance Machinery Co.*, 324 U.S. 806, 815-816 (1945), quoted with approval in *Blonder-Tongue Laboratories, Inc.* v. *University of Illinois Foundation*, 402 U.S. 313, 343 (1971).

This Court has held that even the rigid concepts of res judicata, which do not give way to considerations of "simple justice," yield to the public interest in maintaining the patent system free from misconduct. In *Mercoid Corp.* v. *Mid-Continent Investment Co.*, 320 U.S. 661 (1944), it was argued that res judicata should operate to bar the defense of patent misuse, because it was an issue that might have been, but was not, raised in an earlier suit. This Court declined to apply res judicata, saying that if it did so, "the Court would be placing its imprimatur on a scheme which involves a misuse of the patent privilege and a violation of the anti-trust laws." 320 U.S. at 670. A fortiori, the more flexible doctrine of law of the case must also give way.

This case is not likely to go unnoticed. The vast sums of money at stake and the consequences of upholding a patent monopoly in an industry of national importance guarantee that it will not suffer the usual obscurity of decisions about law of the case, and instead it will be widely read. The decision below gives all the wrong messages, and if allowed to stand, will make law of the case far more rigid than it has been in the past. This, in turn,

will limit the flexibility courts should have up until the time that a final judgment has been entered.

The message of the decision below is that law of the case is not confined to those issues actually decided, but can extend to any issue in the case that an imaginative court can suppose to have been decided, even though the earlier decision was silent on that issue. The decision below teaches, wrongly, that Rule 60(b)(2) is the standard for when substantially different evidence justifies departure from law of the case. Finally, the decision below will be read as meaning that law of the case is an inexorable command, not a guide to discretion, and that it must be applied in one way in all kinds of cases, regardless of considerations of the public interest.

These are grievously wrong and dangerous messages. This Court should review the case to make clear when law of the case does or does not apply.

CONCLUSION

For the foregoing reasons, the Petition For a Writ of Certiorari should be granted.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that three (3) true and accurate copies of the present Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit have been transmitted to opposing counsel by first class mail on this 21st day of June, 1985.

.....

JEFFREY W. TAYON

84-1995

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FILED
JUN 24 1985
ALEXANDER L. STEVAS
CLERK

No. 85-.....

IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

SMITH INTERNATIONAL, INC.,

Petitioner,

v.

HUGHES TOOL COMPANY,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

APPENDIX ON BEHALF OF PETITIONER

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[Fed. Cir. Slip Opinion; reported at 759 F.2d 1572]

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

SMITH INTERNATIONAL, INC., etc.,
Appellant,
v.
HUGHES TOOL COMPANY,
Appellee.

Appeal Nos. 84-1094
84-1767

DECIDED: April 30, 1985

Before FRIEDMAN, BENNETT, and MILLER, *Circuit Judges.*

FRIEDMAN, *Circuit Judge.*

These consolidated appeals challenge orders of the United States District Court for the Central District of California that (1) refused to dissolve a preliminary injunction against patent infringement, (2) denied a motion for summary judgment that the patents are invalid because they had been procured by fraud on the Patent Office or are unenforceable because the patentee's action before that Office constituted inequitable conduct, and (3) barred the infringer in the relief phase of the case from introducing any evidence relating to the latter contention. We affirm in part and dismiss the appeals in part.

I

A. The Prior Proceedings.

In 1972, the appellant, Smith International, Inc. (Smith), filed in the United States District Court for the Central District of California a complaint against the appellee, Hughes Tool Company (Hughes), seeking a declaratory judgment that Hughes' U.S. Patent No. 3,397,928 (the '928 patent) was invalid. Hughes filed a counterclaim asserting that Smith had infringed both the '928 patent and Hughes U.S. Patent No. 3,476,195 (the '195 patent). Both patents are directed to "rock bits," which are

earth-boring tools used in the drilling of oil and gas wells. Hughes' counterclaim sought damages and injunctive relief.

In its answer and during pretrial proceedings, Smith admitted that devices it manufactured infringed certain claims of the two patents, but asserted that the patents were invalid and unenforceable.

Following the trial in 1977, the district court held in 1979 that the two patents were invalid and dismissed Hughes' counterclaim. The court found that certain of Hughes' "submittals" to the Patent Office "did not, in some material respects, meet the applicant's uncompromising duty to make a full and fair disclosure of all facts which may affect the patentability of his invention" (finding 29). It found that the '928 patent was invalid because, among other reasons, "(a) invalidating prior art ... [was] not before the examiner and (b) the failure by Hughes to make a fair and full disclosure materially prevented the examiner from properly interpreting the prior art which was before him" (finding 32). The court, however, eliminated from Smith's proposed Conclusions of Law No. 3, which read:

> Hughes['] failure to make a full and fair disclosure to the Patent Office constituted fraud on the Patent Office and makes the claims of the seal ['928] patent invalid.

The Court of Appeals for the Ninth Circuit reversed, holding that Smith had failed to meet its burden of proving that either patent was invalid. *Smith International, Inc.* v. *Hughes Tool Company*, 664 F.2d 1373, 215 USPQ 592, *cert. denied*, 456 U.S. 976 (1982) *(Smith I)*. The court noted that the district court had "adopted almost verbatim and used as its opinion the proposed findings of Smith International" and that "[t]he Ninth Circuit has repeatedly held that adopted findings require increased appellate scrutiny." *Id.* at 1375, 215 USPQ at 593-94. The "Conclusion" of the court's opinion read as follows:

> The judgment is reversed, and Patents '928 and '195 are declared to be valid. The Hughes counterclaim for infringement is reinstated, and the cause is remanded for further proceedings on the counterclaim.

Id. at 1377, 215 USPQ at 595.

Following the remand, Hughes moved for entry of judgment in its favor, on the ground that Smith had admitted infringement of both patents. It also sought a preliminary injunction. The district court agreed that Smith had conceded infringement, but it declined to enter judgment for Hughes. It concluded that it was "appropriate, rather, to proceed to a determination of the nature and scope of plaintiff's infringement before entering judgment." No. 72-1231 HLH (Order of Oct. 6, 1982), *quoted in Smith International, Inc.* v. *Hughes Tool Company*, 718 F.2d 1573, 1577, 219 USPQ 686, 689 (Fed. Cir.), *cert. denied*, ... U.S. ...., 104 S.Ct. 493 (1983) *(Smith II)*. The court declined to enter a preliminary injunction, "because it considered Smith's admission of infringement to be too general to meet the requirement of specificity for injunctive relief under Fed. R. Civ. P. 65(d)." *Smith II*, 718 F.2d at 1577, 219 USPQ at 689 (describing order of the district court). "[T]he court specifically rejected Smith's argument that there had been no determination of infringement." *Id.*

Hughes appealed the denial of the preliminary injunction to this court. We reversed and remanded the case "with instructions to issue an appropriate preliminary injunction enjoining Smith International, Inc. from infringing claim 1 of the '928 patent on such terms as are deemed proper by the district court." *Id.* at 1582, 219 USPQ at 693. We pointed out that "the validity of the Hughes patents has been adjudicated by a competent appellate court, which we assume considered all possible grounds for invalidating the patents, and yet it rejected them all," *id.* at 1579, 219 USPQ at 691, and that "[t]he Ninth Circuit Court's decision removed any question about the validity

and enforceability of the patents," *id.* at 1580, 219 USPQ at 691. In a footnote, we stated:

> The reinstatement of the Hughes counterclaim by the Ninth Circuit Court, and its remand for further proceedings, in no way indicates that the court viewed the fact of infringement as an open question. In our view, the "further proceedings" provision in the remand order refers to an accounting proceeding and a consideration of the matter of a permanent injunction. No further proceedings are necessary on the issue of whether infringement occurred.

Id. at 1580, 219 USPQ 692.

B. The Present Appeals.

After the district court entered the preliminary injunction pursuant to our mandate, Smith moved the court (1) to grant partial summary judgment in its favor or alternatively to order a separate trial, and (2) to dissolve the preliminary injunction. Both motions were based on the contention that Hughes committed fraud on the Patent Office in obtaining the '928 patent. (Although, as discussed *infra*, p. 13, this court has indicated that the term "inequitable conduct" is more appropriate than "fraud" in referring to proscribed conduct before the Patent and Trademark Office, in the interest of accuracy we use the term "fraud" in this opinion only where the court or the parties have used that term.) In April 1984, the district court denied the motions.

The court held that the law of the case barred Smith from now litigating the issue of fraud before the Patent Office. The court ruled that "the Ninth Circuit's decision that '928 is valid by clear implication decided the issue of fraud against Smith." The court further held that Smith had not provided "new evidence" that, under an exception to the law-of-the-case doctrine, would justify the court in reopening the question. The court concluded that the "new evidence" upon which Smith relied, was unavailable for that purpose because it either could

have been provided at the earlier trial or merely was cumulative to the evidence already in the record.

The appeal in No. 84-1094 is from the order denying those motions.

In February 1984, Hughes moved in the district court to hold Smith in contempt of the preliminary injunction for manufacturing and selling a new device under Smith's U.S. Patent No. 4,372,629 which, according to Hughes, infringed the '928 patent. Prior to filing the motion, Hughes had amended its counterclaim to allege this new infringement. In apparent anticipation of the hearing on those issues, Hughes filed a motion *in limine* to preclude Smith from introducing any evidence relating to Hughes' alleged fraud on the Patent Office. Smith again moved to dissolve the preliminary injunction, relying on additional "newly discovered" evidence of fraud.

In September 1984, the district court entered an order barring Smith from introducing such evidence. The court also denied Smith's motion to dissolve the preliminary injunction.

The appeal in No. 84-1767 is from those two orders.

The trial of the contempt and infringement proceedings, which the district court combined, began in September. On October 16, the district court dismissed the contempt charge, ruled that the infringement trial would go forward, and recessed the trial to November 27. Smith then sought from us a writ of prohibition to prevent the district court from proceeding with the trial. We denied the writ on November 21. The trial of the infringement issue then went forward, and as far as we are aware that issue had not been decided.

II

The district court's refusal to dissolve the preliminary injunction was grounded on the court's conclusion that the decision of the Ninth Circuit in *Smith I*, as we interpreted it in *Smith II*, established as the law of the case that the patent had

not been obtained through fraud on the Patent Office and that the exception to the law of the case for newly discovered evidence was unavailable to Smith. We have authority to review those orders under 28 U.S.C. 1292(a)(1) (1982) as "orders . . . refusing to dissolve . . . injunctions."

It is doubtful whether the district court had any authority to dissolve the preliminary injunction, which it had entered not in the exercise of its own discretion but in compliance with our mandate. 1B J.W. Moore, *Moore's Federal Practice*, § 0.404[10] (1984). *Cf. Northern Helex Company* v. *United States*, 634 F.2d 557, 560 (Ct. Cl. 1980). In order to expedite the final decision of this protracted litigation, however, we pretermit the question of the district court's authority to dissolve the preliminary injunction and review the merits of its refusal to do so.

The other orders from which appeal has been taken are those (1) barring Smith from introducing evidence relating to Hughes' alleged fraud on the Patent Office, and (2) denying summary judgment that the patents are invalid or unenforceable because obtained by fraud. The appealability of the former order is doubtful. The latter order clearly is nonappealable. *E.g.*, *President and Directors of Georgetown College* v. *Madden*, 660 F.2d 91 (4th Cir. 1981); *Valdosta Livestock Co.* v. *Williams*, 316 F.2d 188 (4th Cir. 1963).

Our affirmance of the district court's holding that the Ninth Circuit's decision in *Smith I* that the patents are neither invalid nor unenforceable is the law of the case makes it unnecessary to consider the validity of the other orders, since the challenges to those orders rest on the same grounds. We shall therefore dismiss the appeals insofar as they challenge those orders.

III

The law-of-the-case doctrine is well established in the patent jurisprudence of this court. *Perkin-Elmer Corp.* v.

Computervision Corp., 732 F.2d 888, 900-01, 221 USPQ 669, 678-79, *cert. denied*, ... U.S. ... , 105 S.Ct. 187 (1984); *Central Soya Co.* v. *Geo. A. Hormel Company*, 723 F.2d 1573, 1580-81, 220 USPQ 490, 495 (1983). The doctrine is that

> as a matter of sound judicial practice, under which a court generally adheres to a decision in a prior appeal in the case unless one of three "exceptional circumstances" exists: "the evidence on a subsequent trial was substantially different, controlling authority has since made a contrary decision of the law applicable to such issues, or the decision was clearly erroneous and would work a manifest injustice."

Central Soya, supra, 723 F.2d at 1580, 220 USPQ at 495, *quoting from Short* v. *United States*, 661 F.2d 150, 154 (Ct. Cl. 1981), *cert. denied sub nom; U.S.* v. *Short* and *Hoopla Valley Tribe of Indians* v. *Short*, 455 U.S. 1034 (1982); *United States* v. *Turtle Mountain Band of Chippewa Indians*, 612 F.2d 517 (Ct. Cl. 1979). The doctrine is designed "to provide finality to judicial decisions." *Turtle Mountain Band of Chippewa Indians*, 612 F.2d at 521.

In its decision following our remand in *Smith II*, the district court held that under the law of the case the decision of the Ninth Circuit in *Smith I* barred Smith from now litigating the issues of Hughes' alleged fraud on the Patent Office or the alleged unenforceability of the patents because of Hughes' conduct before that Office. Smith challenges that ruling on three grounds: (A) that the Ninth Circuit did not decide the question of fraud, but that in any event the Ninth Circuit's decision is not the law of the case with respect to enforceability; (B) that there now is available evidence of fraud that is "sufficiently different" from the evidence before the Ninth Circuit so as to bring this case within the exception to the law-of-the-case doctrine for such evidence; and (C) that the decision of the Ninth Circuit reversing one of the grounds upon which the district court initially had invalidated the patent was "clearly erroneous and would work a manifest injustice."

A. Fraud and Unenforceability.

1. In defending the district court's initial determination of patent invalidity in *Smith I*, Smith argued in its brief before the Ninth Circuit, based on the findings of the district court discussed above (*supra*, p. 2), that in prosecuting the application for the '928 patent, Hughes failed to inform the Patent Office about relevant prior art and misled it regarding the "true import" of that art, and that this "was conduct which was a serious breach of a patentee's duty to the Patent Office." It then stated:

> While the district court did not hold the seal ('928) patent invalid on the basis of those findings . . . , it is submitted that this Court should do so on the separate ground of fraud on the Patent Office.

Although in reversing the district court the Ninth Circuit did not discuss the fraud issue, we agree with the district court that "the Ninth Circuit's decision that [the] '928 [patent] is valid by clear implication decided the issue of fraud against Smith."

In order to hold the patent valid, as it did, the Ninth Circuit necessarily must have rejected all the grounds upon which Smith challenged validity and sought to uphold the contrary decision of the district court. One of those grounds was that in obtaining the patent Hughes committed fraud before the Patent Office. Although the law-of-the-case doctrine "applies only to issues that were decided in the former proceeding but not to questions which might have been decided but were not," it " 'comprehends things *decided by necessary implication* as well as those decided explicitly.' " *Morrow* v. *Dillard*, 580 F.2d 1284, 1290 (5th Cir. 1978), *quoting from Carpa, Inc.* v. *Ward Foods, Inc.*, 567 F.2d 1316, 1320 (5th Cir. 1978) (emphasis in original). *E.g.*, *Maggard* v. *O'Connell*, 703 F.2d 1284 (D.C. Cir. 1983); *Fogel* v. *Chestnutt*, 668 F.2d 100 (2d Cir. 1981), *cert. denied*, 459 U.S. 828 (1982); *City of Cleveland* v. *Federal Power Commission*, 561 F.2d 344 (D.C. Cir. 1977); *Terrell* v. *Household*

Goods Carriers' Bureau, 494 F.2d 16 (5th Cir.), *reh'g denied*, 496 F.2d 878, *cert. dismissed*, 419 U.S. 987 (1974). 1B *Moore's Federal Practice*, ¶ 0.404[10]. As we pointed out in *Smith II*, in upholding the validity of the patent in *Smith I* the Ninth Circuit "assume[dly] considered all possible grounds for invalidating the patents, and yet it rejected them all."

Smith points out that courts properly do not hold patents valid but instead hold that the alleged infringer has not shown them to be invalid. *Envirotech Corp.* v. *Al George, Inc.*, 730 F.2d 753, 762, 221 USPQ 473, 480 (Fed. Cir. 1984). It therefore concludes that the Ninth Circuit decision cannot have the effect the district court ascribed to it. Although the language the Ninth Circuit used may have been infelicitous, its meaning was clear. By reversing the district court's determination of invalidity and remanding for further proceedings on the reinstated counterclaim, the Ninth Circuit, as we stated in *Smith II*,"removed any question about the validity and enforceability of the patent."

Smith asserts that in *Mutual Life Insurance Co.* v. *Hill*, 193 U.S. 551 (1904),

> the Supreme Court held that once an appellate court reverses and remands a decision of the trial court, as in this case, the law of the case is established by the appellant court's decision only for "questions in terms discussed and decided." *Id.* at 553-54. This case supports Smith's position that the issue of invalidity due to fraud was not decided by the Ninth Circuit's 1982 opinion because the issue of fraud was not discussed and decided, and as such, is not law of the case.

Smith overstates the holding in that case. All the Supreme Court stated was that "a judgment of reversal is not necessarily an adjudication by the appellate court of any other than the questions in terms discussed and decided." *Id.* at 553-54. In the present case, as we have shown and as we implicitly held in *Smith II*, the Ninth Circuit's decision in *Smith I* that the '928 patent is valid, in the language of the district court in the order

under review, "by clear implication decided the issue of fraud against Smith." Moreover, as we have noted, the current view is that a decision is the law of the case not only with respect to "questions in terms discussed and decided" but also questions decided by necessary implication.

2. Smith argues that even if the Ninth Circuit's rejection of the fraud contention is the law of the case, that decision does not bar Smith from now litigating its contention that the patents are unenforceable because of Hughes' alleged misconduct before the Patent Office. It asserts that fraud before the Patent Office and misconduct before that Office that makes a patent unenforceable are separate and distinct grounds of defense to a charge of infringement. It refers to section 282 of the patent laws, which provides that in patent validity or infringement suits, unenforceability and invalidity are separate defenses. At oral argument, however, Smith conceded that the facts underlying its claim of unenforceability are the same as those upon which its claim of fraud rests.

This court recently stated that "inequitable conduct" is a more appropriate term than "fraud" for describing conduct before the Patent and Trademark Office that renders a patent unenforceable, since "inequitable conduct" "encompasses affirmative acts of commission, e.g., submission of false information, as well as omission, e.g., failure to disclose material information." *J.P. Stevens Co., Inc.* v. *Lex Tex Ltd., Inc.*, 747 F.2d 1553, 1559, 223 USPQ 1089, 1092 (1984). We further held that the inequitable conduct defense "results in unenforceability," not invalidity. *Id.*, 747 F.2d at 1560, 223 USPQ at 1093.

Whatever validity the distinction between "fraud" (as Smith defines that term) and inequitable conduct still may retain in the context of activities outside the Patent and Trademark Office, we hold that the Ninth Circuit's determination that Hughes did not obtain the patent by fraud on the Patent Office is the law of

the case also with respect to the contention that the same conduct upon which the claim of fraud was based constituted inequitable conduct that made the patent unenforceable. The reasons that led the Ninth Circuit to conclude that those facts did not establish fraud also require the same conclusion with respect to unenforceability.

3. Smith refers to the public interest in protecting the integrity of the patent issuing process and preventing the enforcement of patents secured by fraud. *See Precision Instrument Manufacturing Co.* v. *Automotive Maintenance Machinery Co.*, 324 U.S. 806, 816 (1945); *Rohm and Haas Company* v. *Crystal Chemical Company*, 722 F.2d 1556, 1571, 220 USPQ 289, 301 (Fed. Cir. 1983), *cert. denied*, ... U.S. ..., 105 S.Ct. 172 (1984). It suggests in effect that an exception to the law-of-the-case doctrine should be permitted to enable it to relitigate the validity of the Hughes patents to show they were obtained through fraud. We reject the suggestion. The law-of-the-case doctrine rests upon weighty considerations of sound judicial administration, and its application should not and cannot depend upon the nature of the issue that a party seeks to relitigate.

B. New Evidence.

In seeking to dissolve the preliminary injunction, Smith relied upon certain "new evidence," of which it asserted it had become aware only recently. The district court held that under Ninth Circuit law

> [i]ssues resolved by the judgment of the Court of Appeals may not be reopened for the admission of additional evidence unless that evidence is newly discovered within the meaning of Rule 60(b)(2). *Corex Corp.* v. *United States*, 638 F.2d 119 (9th Cir. 1981). "New evidence" under the rule must be evidence ... that could not have been produced by due diligence during the trial or in time to move for a new trial under Rule 59(b), and that is not merely cumulative.

As noted, the district court concluded — correctly, as we have held — that the Ninth Circuit's decision upholding the validity of the '928 patent "by clear implication decided the issue of fraud against Smith." The court accordingly then proceeded to "determine whether Smith has presented any 'new evidence' within the meaning of the law of the case doctrine. If there is no such new evidence, this Court is strictly bound by the mandate" of the Ninth Circuit in *Smith I*.

The court reviewed at some length the four items of "new evidence" upon which Smith relied to show fraud on the Patent Office. The court concluded that Smith either was aware of this new evidence or could have discovered it by reasonable diligence before the trial of the case in 1977, or that the evidence was merely cumulative of the evidence already in the record. On the basis of this review, the court concluded:

> Smith has no "new evidence." In the absence of "new evidence," this Court is bound by the mandates of the Ninth and Federal Circuits.

Before this court, Smith does not challenge the district court's determination that all of its new evidence either was, or with reasonable diligence could have been, known to it long ago, or was merely cumulative. Instead, it argues that the district court erred in applying that standard in denying its motions. Smith contends that Rule 60(b) is inapplicable because it covers only modifications of final judgments, that the only final judgment in the case was the district court's 1979 judgment holding the patents invalid, and that the Ninth Circuit's reversal of that judgment eliminated it. Smith further argues that because the ground for the exception to the law-of-the-case doctrine is the existence of "substantially different" and not "newly discovered" evidence, it was improper for the district court to apply the latter standard in considering Smith's motions to dissolve the preliminary injunction.

Rule 60(b)(2) permits the court to relieve a party from a final judgment for "newly discovered evidence which by due diligence could not have been discovered in time to move for a new trial under Rule 59(b)." The "due diligence" limitation serves the salutary purpose of providing finality to judicial decisions and orders by preventing belated attempts to reopen judgment on the basis of facts that the moving party could have discovered at the time of trial.

We cannot say that the district court abused its discretion or otherwise committed reversible error in applying the "newly discovered" evidence standard of Rule 60(b)(2) in determining that Smith had not shown the existence of "substantially different" evidence that justified an exception to the law-of-the-case doctrine. As noted, the law-of-the-case doctrine is designed to "provide finality to judicial decisions." *Supra*, p. 8. It thus serves the same objective as the "newly discovered" requirement in Rule 60(b)(2).

Smith has offered no convincing policy reasons for rejecting the district court's view of the requirements of the "substantially different" evidence exception to the law of the case, and we cannot discern any. To the contrary, we think that the district court's interpretation of that exception furthers the underlying purpose of the law-of-the-case doctrine. In this case, Smith is seeking to reopen factual issues finally laid to rest by the Ninth Circuit in 1982 on the basis of evidence it could have discovered with due diligence at least by the time of the trial of this case in 1977. The district court was fully justified in rejecting this attempt.

C. Reexamination of the Ninth Circuit Decision.

One of the grounds upon which the district court initially invalidated the '928 patent was that the patent had been anticipated by the Turner patent covering a drilling bit and therefore was invalid under 35 U.S.C. § 102. In *Smith I*, the Ninth Circuit set aside the district court's ruling of anticipation because

Smith had not met its burden of proving invalidity on that ground. Smith now argues that that ruling of the Ninth Circuit was "clearly erroneous" and "would work a manifest injustice," and that therefore that decision comes within the exception to the law of the case covering that situation. Its argument turns on complex factual assertions, which Hughes strongly disputes.

"The standard under this exception is a stringent one" and requires " '[a] strong showing of clear error' " that "convince[s]" the court that the "prior decision was incorrect." *Northern Helex*, 634 F.2d at 562. Without going into the details of this factual issue, it suffices to say that Smith has not made the "strong showing of clear error" necessary before we should disregard the decision of the Ninth Circuit.

IV

Smith also argues that Hughes committed fraud on the courts by "attempting to conceal [its] misrepresentations and omissions from all litigants and the courts" on three separate occasions: (1) before the district court and the Ninth Circuit during the liability phase of this case; (2) before the United States District Court for the Northern District of Texas in a patent infringement suit Hughes filed against Dresser Industries, Inc.; and (3) before the district court during proceedings on the motions here on appeal.

The substance of the first two allegations is that Hughes falsely represented to the court (i) that affidavits Mr. Galle, the inventor of the '928 patent, filed in the Patent and Trademark Office were accurate, and (ii) that consequently there was no inequitable conduct before that Office. They are essentially the same allegations Smith relies on for its fraud and inequitable conduct arguments. We have held that the district court properly rejected this evidence as a ground for modifying the preliminary injunction because the evidence was cumulative or could have been discovered long ago through due diligence.

Smith has not convinced us that this same conduct constituted fraud on the courts.

On the third occasion, Mr. Galle is alleged to have given false testimony concerning the circumstances surrounding the affidavits. The district court, however, had before it at that time all the evidence now before this court, and therefore was fully capable of determining whether Mr. Galle's statements were false. Smith has not shown that Hughes committed fraud on the court on that occasion.

V

Two other issues in the case require only brief comment.

A. In July 1984, after the docketing of the appeal in No. 84-1094 but prior to the order of the district court that is the subject of the appeal in 84-1767, Smith filed with us a motion to remand the case to the district court to consider "recently uncovered evidence of fraud and inequitable conduct." The court remanded that motion to the merits panel "for determination along with the main appeal."

In view of our disposition of these appeals, the motion to remand is denied as moot.

B. Hughes has argued that Smith's appeals are frivolous and based on misstatements of the record and that we should therefore award Hughes its attorney fees incurred in litigating the appeal. Although we have rejected Smith's contentions, we cannot say its appeals are either frivolous or based upon misstatements of the record. Accordingly, we deny Hughes' request to award it attorney fees.

VI

Because of the protracted nature of this case and the course of its proceedings, we think it appropriate to aid the district court and counsel by indicating what issues are still open and what issues have been definitely decided.

The only questions still undecided are those relating to remedy, namely, the determination of damages and the issuance of any permanent injunctive relief that the district court deems appropriate. All issues with respect to (1) the validity and enforceability of the '928 patent, including Hughes' alleged fraud or inequitable conduct that would make the patents unenforceable, and (2) the fact of infringement, have been resolved in favor of Hughes. The extent of infringement, as distinguished from the fact, is a matter for the district court to decide in determining damages and the scope of any injunctive relief. Nothing in this opinion is intended to suggest any views on the question now before the district court whether Smith infringed the '928 patent in manufacturing new devices covered by Smith's U.S. Patent No. 4,372,629.

The orders of the district court are affirmed insofar as they denied Smith's motions to dissolve the preliminary injunction. The appeals are dismissed insofar as they seek review of the portions of the orders of the district court that (1) barred Smith from introducing in the relief phase of the case any evidence relating to Hughes' alleged fraud on the Patent Office or alleged inequitable conduct that would render the patents unenforceable, and (2) denied partial summary judgment in favor of Smith and refused to order a separate trial.

AFFIRMED IN PART and
DISMISSED IN PART.

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

SMITH INTERNATIONAL, INC.,
a California corporation,

Plaintiff,

v.

HUGHES TOOL COMPANY,
a Delaware corporation,

Defendant.

Civil Action No. 72-1231-RF
MEMORANDUM

The Court has found against the defendant and in favor of plaintiff, as reflected in the findings of fact and conclusions of law. A copy of the findings and conclusions is enclosed herewith for each counsel.

Plaintiff shall prepare and submit a proposed judgment in accordance with those findings and conclusions within five days hereof. Defendant will have five days thereafter to file any objections to the proposed judgment.

DATED: October 31, 1979.

/s/ ROBERT FIRTH
ROBERT FIRTH
United States District Judge

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IN THE UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

SMITH INTERNATIONAL, INC.
a California corporation,

Plaintiff,

v.

HUGHES TOOL COMPANY,
a Delaware corporation,

Defendant.

Civil Action No. 72-1231-RF

FINDINGS OF FACT AND CONCLUSIONS OF LAW

On June 2, 1972, Smith International, Inc. (Smith herein) filed a complaint in this Central District seeking a declaratory judgment that U.S. Patent No. 3,397,928 owned by defendant Hughes Tool Company (Hughes herein) is invalid. On or about November 15, 1973, Hughes filed a First Amended Answer which included a counterclaim charging Smith with infringement of the above-noted U.S. Patent No. 3,397,928 and, additionally, charging infringement of a second patent, U.S. Patent No. 3,476,195. Subsequently, on or about June 24, 1974, Hughes filed a Second Amended Answer charging that the alleged infringement of the two named patents was willful and deliberate, and adding a demand that any award of damages for the alleged infringement be tripled.

Findings of Fact

1. Smith is a corporation organized and existing under the laws of the State of California and has its principal place of business in Irvine, California.

2. Hughes is a corporation organized and existing under the laws of the State of Delaware and has its principal place of business in Houston, Texas.

3. Both Patent No. 3,397,928 (referred to herein as the "seal patent") and Patent No. 3,478,195 (referred to herein as the "relief valve patent") name Edward M. Galle as inventor and are owned by Hughes. Each is directed to the incorporation of the "title" feature, i.e., a resilient packing ring, e.g., an O-ring, in the case of the seal patent and a relief valve in the case of the other patent, in rock bits, which are tools used in the drilling of oil wells.

4. No patent claims are presented in this litigation in which there is the combination of a relief valve and a resilient packing ring as claimed in the seal patent. Whatever the contribution of these features, namely, the pressure relief valve and, separately, the resilient packing ring as claimed in the seal patent, such must be separately assessed and treated.

The Seal Patent

5. Although the seal patent contains eleven claims, it is clear that the concept asserted to be patentable was the sizing of the groove in which the ring is positioned and an opposing surface so that when the rock bit is assembled, the ring is "compressed by not less than substantially ten percent." The function of the ring is to provide a seal which seals the lubricant within the rock bit from the drilling fluid in which rock bits are rotated during drilling operations.

6. The groove for the ring and the opposing surface define a cavity which is termed a gland. To produce compression in the ring and therefore force it into sealing relationship with the

surfaces of the gland, the gland depth (typically designated L) is made less than the diametrical cross-section of the ring (typically designated W). The difference between these two dimensions (W–L) gives the amount of dimensional compression of the ring. Dividing that value by the uncompressed diametrical cross-section of the ring and multiplying by 100 expresses the compression as a percentage.

7. The terms "compression," "interference," and "squeeze" are interchangeably used in the art.

8. In a rock bit, a cutter is rotatably mounted on a stationary shaft. The seal formed between these elements is termed a dynamic or moving seal and, more specifically, a rotating or rotary seal. This is the nature of the seal to which the claims of the seal patent are directed.

9. The claimed subject matter of the seal patent is not limited to a specific bearing structure. The patent drawings illustrate the use of the rotary seal both in a rock bit having a roller bearing and in a rock bit having a solid journal bearing. Both of these embodiments are encompassed by the claims of the seal patent.

10. The claimed subject matter of the seal is not limited to any specific speed of rotation of the cutter. During the long history of use of resilient packing rings as rotary seals, it came to be recognized that the rubbing between the peripheral surface of the resilient ring and the engaging gland surfaces produced friction which resulted in generation of heat. As will be more specifically treated below, it was found that the heat generated at lower surface speeds (the speed on the peripheral surface of the ring) was sufficiently low so that it did not affect the life of the resilient packing ring. At higher surface speeds, however, the heat generated could be enough to adversely affect the life of the seal.

11. The most widely used type of resilient packing ring is the O-ring. O-rings were widely used by the military and the air force during World War II and considerable research and development with O-rings took place during that period.

12. At the end of World War II, engineers who had worked with O-rings during the war entered industry and found that O-rings could be used in a great variety of industrial applications. Over the period from World War II to the early 1960's, there was extensive development of O-ring technology and uses. O-rings provided reliable, comparatively foolproof and relatively inexpensive seals.

13. There was widespread distribution of handbooks and catalogs by manufacturers of O-rings to explain to design engineers in industry the various applications of O-rings and to provide the design data for their installation. O-rings were extensively used in many industries and in many fields such as mechanics, hydraulics, and pneumatics.

14. The Parker Seal Company was one O-ring manufacturer which distributed catalogs for use by its own staff engineers and by tool and parts designers and engineers in industry. Its 1957 catalog is a comprehensive work providing gland dimensions for installation of O-rings and much additional data.

15. In the 1957 Parker catalog, recommendations were given for rotary seal applications. The catalog recommended that for surface speeds of from 0 to 200 sfm, the gland dimension data in Design Chart 8-1 should be used. This chart also listed the range of squeezes which would be obtained by using the gland dimensions recommended for each of five commonly used O-ring cross sections.

16. A range of squeeze was shown in the Parker catalog for each of the listed O-ring cross-sections because there are tolerances in the making of O-rings and in the making of parts. Since

it is economically impossible to make a part exactly to a dimension in production, design is based upon the mean between the tolerances. This is termed the design center.

17. The minimum squeeze is obtained by a calculation based upon the smallest O-ring cross-section (W) within the tolerance range for a specified O-ring and the largest gland depth (L) within the tolerance range for the correspondingly specified gland depth. The maximum squeeze is obtained by using the largest O-ring cross-section and the smallest gland depth, each within its respective tolerance range. The design center squeeze is based upon the mean of the tolerances for the O-ring and the gland depth.

18. The O-ring cross-sections listed in Design Chart 8-1 of the 1957 Parker catalog include the O-ring cross-sections specifically referred to in the seal patent. The design center percentage squeezes recommended in that catalog for rotary O-ring seals in the speed range of from 0 to 200 fpm were in no case less than 10%.

19. Linear was another O-ring manufacturer which distributed in the 1950's a catalog describing O-ring applications. Linear set up a testing program following World War II to evaluate seals which included testing of O-rings in rotary seal applications. As a result of this work, Linear concluded that O-rings should not be recommended for peripheral speeds exceeding 350 fpm. This conclusion was based upon measurements of temperature rise versus rotational speed. While the rise was gradual up to the recommended speed limitations, the temperature rose abruptly above that speed.

20. The results of Linear's testing program information was included in a paper presented in 1950 by Mr. Swartz to, and published by, the National Conference on Industrial Hydraulics. The paper, Exhibit FW, stated at FW-16: "A third type of O-ring installation which is becoming increasingly widely used is the oscillating or rotating shaft seal. . . . Against rotating shafts,

the frictional heat generated is usually the limiting factor and O-rings are not recommended where peripheral speeds exceed 350 F.P.M."

21. In catalogs issued by Linear during the 1950's there was included a table entitled "Rotating or Oscillating Seal Gland Dimensions For Use With Linear Series 11 O-Rings." The identical data was presented in a 1954 catalog of Crane Packing Company, a distributor for Linear O-rings. The table was prepared specifically to assist engineers who were using O-rings in rotating equipment. A footnote to the table limited the recommendations as to gland dimensions to speeds below 350 fpm. Based upon the gland dimensions provided through use of the catalog table for rotating seals, the design center percentage squeeze recommended by Linear for rotary O-ring seals operating at speeds up to 350 fpm was in no case less than 10%.

22. One of the major factors involved in the minimum squeeze for a rotating seal application, as Mr. Swartz testified, is the clearance between the rotating element and the stationary element. For a given minimum squeeze, there is recommended a maximum clearance. If a customer's application involves a clearance in excess of the maximum recommended clearance, then a new higher minimum squeeze is required.

23. The need for increasing the minimum squeeze where there are greater than recommended clearances is illustrated and described in Section 5 of the 1951 Product Engineering article. There must be sufficient minimum squeeze so that if the shaft is rotating eccentrically there remains sufficient contact on the unloaded side to maintain a seal. If the minimum squeeze were not raised when the maximum recommended clearance is exceeded, there would be leakage because possible eccentric-loading or side-loading of the shaft could increase the squeeze on one side and decrease it to possibly zero on the other side.

24. The need for increasing minimum squeeze where there are greater than recommended clearances was and is part of the

routine skills of designers and engineers and such need was known long prior to filing of the application for the seal patent.

25. Use of resilient packing rings in rock bits is shown in a number of prior art patents, such as Patent No. 1,909,128-Scott which issued in 1933 and Patent No. 2,814,465-Green which issued in 1957. The use of an O-ring seal in rock bits is specifically shown in prior art patents, such as Patent No. 3,127,942-Neilsen which issued in 1964 to Smith and Patent No. 2,676,790-Turner which issued in 1954. Both Neilson and Turner qualitatively describe compression or squeezing of the O-ring to achieve sealing.

26. The foregoing fully demonstrates that the subject matter claimed in the seal patent was an old combination. These prior combinations of a resilient packing ring with the other conventional elements of a rock bit, the ring being an O-ring in the case of the Neilson and Turner patents, were the same combination as was asserted to be the inventive concept in the seal patent, and these combinations were described as performing the very same function as described for the combination in the seal patent.

27. Together with the foregoing body of prior art, Turner Bit Company in the 1950's and Smith in 1961-1964 manufactured, used, and sold rock bits having O-ring seals as shown in the Turner and Neilson patents respectively. O-rings in these bits which were in public use and on sale were squeezed to the quantitative amounts later patented in the seal patent. These activities of Turner Bit and Smith will be more fully treated below. Nevertheless, these activities are as much a part of the prior art as are the patents and other materials already discussed.

28. The evidence clearly shows that most, if not substantially all, sealed bearing rock bits, both journal bearing and roller bearing, are run at speeds below 200 fpm. It appears to be the exception rather than the rule that such bits are run for any

significant period of time in excess of 200 fpm. In any event, separately, there was, as part of the prior art, the publications of Linear teaching that squeezes in excess of 10% should be used in rotary seal applications for speeds up to 350 fpm.

29. The prosecution history of the seal patent reveals that Hughes submitted comparative bit data and recommendations of O-ring manufacturers in order to persuade the Patent Office examiner to withdraw his rejection of the claims under consideration. These submittals did not, in some material respects, meet the applicant's uncompromising duty to make a full and fair disclosure of all facts which may affect the patentability of his invention.

30. As to the comparative bit data, it was not disclosed to the examiner that the bearing structures in the bits being compared were different. Unknown to the examiner, one bearing structure typically provided a bit life of twice that provided by the other bearing structure. The data was submitted to the Patent Office in a context that would have led the examiner to believe that the improved bit life was attributable solely to squeeze placed upon the O-ring. Further, Hughes had data, which it did not submit, showing that, when run with the same bearing structure, there was no significant difference in bit life whether the seal was an O-ring seal or a Belleville seal.

31. As to the recommendations of the O-ring manufacturers, Hughes did not make available to the examiner complete information as to the seals being compared. In addition, the Patent Office examiner was not informed by Hughes as to the speeds of rotation which were involved in the subject matter claimed in the seal patent. He was left, therefore, without any basis for recognizing that the instruction in the Parker catalog, "Use Chart 8-1" for speeds of from 0 to 200 fpm, was applicable to the subject matter before him.

The Invalidity of the Seal Patent

32. The presumption of validity as to the seal patent is overcome because (a) invalidating prior art, such as the Linear catalogs and the 1951 Product Engineering article, were not before the examiner and (b) the failure by Hughes to make a fair and full disclosure materially prevented the examiner from properly interpreting the prior art which was before him.

33. The level of skill in the art of O-rings and in the art of rock bit design is high. Combined in the case of the seal patent are the high levels of skill found in both the O-ring art and the rock bit design art. It is against that combination of skills that the obviousness of squeezing an O-ring "not less than substantially ten percent" must be measured.

34. The seal patent is directed to those skilled in the O-ring art and in the rock bit design art. The evidence supports that the compressions, i.e., ten percent, fifteen percent, recited in the claims of the seal patent would be considered design center percentage squeeze by those skilled in these arts.

35. While Turner and Neilson left the quantitative amount of squeeze to the routine skills of the tool designers and engineers to which their patents were directed and to the catalogs and representatives of O-ring manufacturers, the recommendations and directions of the latter were to use in low speed rotary O-ring seal applications the same quantitative amount of squeeze as was asserted to be the basis for patentability of the seal patent. There was no bona fide deterrent to applying the squeezes taught in publications such as Design Chart 8-1 or the table for rotating seals in the Linear catalog to the resilient packing ring in rock bits.

36. There was a total absence of any "unusual or surprising results" in applying a squeeze of "not less than substantially 10%" to the resilient packing ring in the old combinations of

such a ring in a rock bit. No effect greater than the sum of the separate parts took place. There was no synergism whatsoever.

37. The application of a squeeze of "not less than substantially 10%" was no more than a routine expedient, established by prior practices, to insure that there was sufficient squeeze to provide a positive squeeze at all times taking into account the clearances and eccentricities which were known to be present in rock bits.

38. There is therefore no factual basis for establishing non-obviousness.

39. Exhibits CE through CI are components of a rock bit made by Turner Bit Company during the period 1948-1958. The bit has a cutter rotatably mounted on a solid-journal-bearing shaft secured to the bit body, the cutter having a bearing surface opposing and engaging the bearing surface of the shaft. A resilient packing-ring seal of the O-ring type is fitted in a groove in the cutter bearing surface to be radially compressed between the cutter and shaft as a rotary shaft seal. The O-ring had a nominal cross-sectional diameter of at least 0.139 inch before installation in the bit and was squeezed in excess of 10 percent of this nominal cross-sectional diameter when installed in the bit.

40. Turner bits of the type exemplified by Exhibits CE through CI were made and sold by the Turner Bit Company during the period 1948-1958, and these bits were known and used by others in the United States long prior to the making of the invention claimed in the seal patent. Claims 1-11 of the seal patent define an invention directed to the same problem and solution embodied in the prior-art Turner bits, and the claimed invention does not present any unusual or surprising result. The Turner bits anticipate the invention claimed in the seal patent, and any differences between the Turner bits and the claimed invention would have been obvious to one of ordinary skill in the art when the claimed invention was made.

41. Smith made and sold about 72 rock bits during the period 1961-1964 in the course of completing design evaluation programs ER803, 809, 814, 854, and 886. These bits used conventional O-ring seals and also composite O-ring seals corresponding to the seal styles shown in the seal patent. The seals as installed in the Smith bits were squeezed in excess of 10 percent of the cross-section diameter of the seals prior to installation. Another ER program (ER831) during 1961-1964 tested about nine bits using O-rings squeezed to a design-center value of about 35 percent. Smith concluded that a 35-percent squeeze was excessive, and subsequent projects completed by early 1964 (ER854 and 886) successfully employed O-rings squeezed to design-center values of 13.6 and 13.97 percent. These ER programs were all completed and the bits were used to drill oil wells more than one year before the filing date (and before any earlier date of invention) accorded the seal patent.

42. The very nature of the subject matter claimed, namely, components subject to tolerances, and the uncertainty introduced by the word "substantially" in the claimed subject matter of the seal patent fails to notify the public with a reasonable certainty of the dividing line between what infringes and what does not.

The Relief-Valve Patent and Its Invalidity

43. The relief-valve patent is directed to use of conventional relief valves in an otherwise conventional rock bit to vent excessive grease-pressure in the lubrication system associated with the bit bearings. This arrangement is directed at the ultimate goal of maximizing bearing life by preventing premature failure of pressure-sensitive components in the lubrication systems. The patent acknowledges that the development of a solution (use of a relief valve) was simple, and instead characterizes the invention as recognition of a problem — namely the recognition that pressure-sensitive components in the lubrication system could be damaged by excessive pressure arising from lubricant heating

occurring while the bit was drilling rock at the bottom of a hole being bored.

44. U.S. Patent 2,906,504-Parks issued in 1959, and shows a rock bit with rotatably mounted cutters. A lubricant-filled bearing space between each cutter and an associated supporting pin is sealed by an O-ring shaft seal. Grease is admitted to the bearing space through a pressure control valve (piston 15 and associated parts in the patent drawing) which functions as a compensator to maintain grease pressure in the bearing space above the pressure of drilling fluid in the annulus outside the bit. A passage extends from the bearing space to the annulus, and a relief valve positioned in this passage releases excessive pressure which may develop in the bearing space when the bit is drilling a well. The relief valve and pressure control valve are vented through the same passage to drilling fluid in the annulus.

45. The *Parks* patent discloses that an excessive pressure may develop within the bearing space of a rock bit when the bit is drilling "on bottom" due to heating of the bearing lubricant. The patent also teaches that this excessive pressure, unless relieved, may damage components of the lubrication system and thereby shorten bearing life, leading to a premature failure of the bit. The solution disclosed in the patent is to insert a relief valve in the bearing space to bleed excessively pressurized lubricant to the outside of the bit. The Parks patent discloses the same problem and the same solution described and claimed in the relief-valve patent.

46. Relief valves were used in rock bits made and tested by Smith in the early 1960's, more than one year before the filing date (or any earlier date of invention) accorded the relief-valve patent. The valves in the Smith bits were a low-pressure type arranged to bleed excessively pressurized lubricant in the bit bearings to the outside of the bit. Belleville seals were used to seal the bearing spaces of rock bits commercialized and shown in prior-art patents more than one year before the filing date (or

any earlier date of invention) accorded the relief-valve patent. Belleville seals function as low-pressure relief valves to bleed excessively pressurized lubricant in the bit bearings to the outside of the bit. The prior-art patents show rock bits incorporating Belleville seals and flexible compensators which are vented to drilling-fluid regions at substantially the same fluid pressures.

47. The claims of the relief-valve patent define a combination of parts constituting a rock-bit drilling tool. The only alleged difference between the claimed combination and prior-art rock bits is the addition of a convention relief valve. The Patent Office examiner who examined the applications leading to the relief valve patent did not cite or show awareness of any prior art relating to use of a low-pressure relief valve to bleed excessively pressurized lubricant from the bearing space of a rock bit. This alleged difference is clearly disclosed in the non-cited prior art, and any minor differences between the claimed invention and the prior art would have been obvious at the time the invention was made to one of ordinary skill in the rock-bit art.

48. The relief-valve patent is not entitled to a presumption of validity because the prior art on which the patent is invalid was not before the Patent Office at the time of examination of the application leading to the patent.

Conclusions of Law

1. Any differences between the subject matter of claims 1-11 of the seal patent and the prior art were obvious at the time the invention was made, and the claims are invalid, 35 U.S.C. 103.

2. Claims 1-11 of the seal patent define subject matter anticipated by the prior art, and the claims are invalid, 35 U.S.C. 102(a) and (b).

* * * *

4. The claims of the seal patent fail to particularly point out and distinctly claim the subject matter which was regarded as invention and are therefore invalid, 35 U.S.C. 112.

5. The subject matter of the relief-valve patent is anticipated by the prior art, and all claims of the patent are invalid, 35 U.S.C. 102(a) and (b).

6. Any differences between the subject matter of claims 1-11 of the relief-valve patent and the prior art were obvious variations of the prior art, and the claims are invalid, 35 U.S.C. 103.

7. Secondary consideration such as commercial success and alleged copying, even if found to exist, which is not the case here, cannot lend validity to either the seal patent or the relief valve patent where, as here, the lack of patentable invention has been clearly shown.

8. All claims of U.S. Reissue Patent 28,625, earlier asserted by Hughes against Smith in this action, have been held invalid by a previously entered consent judgment.

* * * *

Plaintiff is entitled to judgment in conformity with the foregoing Findings of Fact and Conclusions of Law.

Dated this 31 day of Oct, 1979.

/s/ R. FIRTH
United States District Judge

Presented By:
CHRISTIE, PARKER & HALE
ANDREW J. BELANSKY
RUSSELL R. PALMER, JR.

[644 F.2d 1373]

SMITH INTERNATIONAL, INC., a
California Corporation,
Plaintiff-Appellee,

v.

HUGHES TOOL COMPANY, a Delaware
Corporation, Defendant-Appellant.

No. 80-5199.

United States Court of Appeals,
Ninth Circuit.

Argued and Submitted Oct. 3, 1981.

Decided Jan. 7, 1982.

Rehearing Denied Feb. 22, 1982.

Patentee appealed from declaratory judgment of the United States District Court for the Central District of California, Robert Firth, J., which held two patents invalid for obviousness, for anticipation by prior art, and for failure to properly claim patentable art. The Court of Appeals, Goodwin, Circuit Judge, held that: (1) plaintiff failed to meet his burden of proving invalidity of patent No. 3,397,928, describing use of O-ring of specified hardness and squeeze used in journal as well as roller bearing under high speed and high temperature rotary conditions; (2) finding that patent did not clearly claim patentable art was erroneous; (3) plaintiff failed to prove invalidity of patent No. 3,476,195, combining pressure relief valve with pressure compensator; and (4) such patent also clearly stated patentable art it was claiming.

Reversed and remanded.

1. Patents 324.55(1)

Although clearly erroneous standard applied in patent case where trial court adopted proposed findings of plaintiff, heightened scrutiny would be given to findings not prepared by trial court.

2. Patents 328(2)

Plaintiff failed to meet its burden of proving invalidity of patent No. 3,397,928, describing use of O-ring of specified hardness and squeeze used in journal as well as roller bearing under high speed and high temperature rotary conditions, where, although individual elements such as O-ring and journal bearing were well-known, their combination was not known, combination of elements produced new and unexpected results, and patent was not anticipated by prior art. 35 U.S.C.A. §§ 102, 103.

3. Patents 26(2)

In judging validity of combination patent, combination must be synergistic and result in new and unexpected characteristics. 35 U.S.C.A. §§ 102, 103.

4. Patents 112.1

Statutory presumption of patent validity is dissipated only when patent examiner is shown to have failed to consider pertinent prior art. 35 U.S.C.A. § 282.

5. Patents 312(6)

Finding that patent did not clearly claim patentable art was erroneous, where drawings and articulation of subject matter of patent were detailed and clear.

6. Patents 328(2)

Plaintiff failed to prove invalidity of patent No. 3,476,195, combining pressure relief valve with pressure compensator, where subject matter, taken as a whole, was not obvious because no patent used by plaintiff as example of prior art involved pressure compensator. 35 U.S.C.A. § 103.

7. Patents 101(5)

Contrary to mistaken ruling of trial court, patent combining pressure relief valve with pressure compensator clearly stated patentable art it was claiming.

Edward A. Haight, Haight, Hofeldt, Davis & Jambor, Chicago, Ill., for defendant-appellant.

Andrew J. Belansky, Christie, Parker & Hale, Pasadena, Cal., for plaintiff-appellee.

Appeal from the United States District Court for the Central District of California.

Before GOODWIN, NELSON and REINHARDT, Circuit Judges.

GOODWIN, Circuit Judge.

Hughes Tool Co. appeals a declaratory judgment which held two patents invalid for obviousness, for anticipation by prior art, and for failure to properly claim the patentable art.

A. Rotary Drilling Problem.

Rotary drilling for oil and gas wells uses a rock bit threaded onto a drill pipe "string" which is lowered into a hole and rotated. The rock bit, in addition to having a "head" for such threading, has three rotatable cones with teeth or other cutting elements. These elements turn on bearings located in the interior of each cone and on three shafts or axles suspended from the "head." When the bit is lowered and rotated under great weight against the bottom, a drilling fluid is pumped down through the drill pipe, to the drill bit and then through nozzles in the bit to pick up loosened cuttings and carry them to the outside of the pipe and eventually to the surface between the drill pipe and the well casing.

Two types of bit are in use, the roller bearing bit and the journal bearing bit. In the first, free-turning rollers separate the cylindrical surfaces on the inside of the shaft; in the second, the cylindrical surfaces oppose and engage each other. Either type performs under demanding conditions. At a depth of several miles, for example, the downhole temperatures can reach 400°F,

and the drilling fluid may whip through and around the bit at 200-500 gallons per minute.

The resultant wear means that spent bits must be brought to the surface for replacement at great cost to a drilling company. For this reason, the industry has continuously searched for means to increase the working life of bits. Prior to the Hughes Patent No. 3,397,928 ('928) and Patent No. 3,476,195 ('195) patents, engineers attempted to increase the bit lifespan by sealing the drill bit to eliminate slush lubrication, a process in which the abrasive drilling fluid circulates freely through the bearings and produces wear.

Two sealing methods were patented prior to the Hughes patents, but neither used an O-ring in combination with a journal or roller bearing and a recommended minimum squeeze for the O-ring. The Turner Patent in 1954 used an O-ring to seal a journal as well as a ball bearing but did not suggest anything more specific that a "slight" squeeze of the O-ring. According to the deposition of four former employees of Turner Bit Company, the Turner seal was plagued with leakage while the company continued to experiment with seals in a variety of positions and configurations. Consequently, the company became defunct, and its remaining bits were auctioned off to a junk dealer. Smith discovered that one of the Turner bits had an O-ring seal and entered the bit into evidence in the instant case as an illustration of prior art.

The Neilson Patent in 1962 restricted itself to using an O-ring in a roller bearing and, like the Turner patent, did not specify a minimum amount of squeeze.

The Parker Handbook, the most comprehensive and authoritative guide in the trade, cautioned against an O-ring seal under rotary conditions involving high temperatures and high speed rubbing surfaces. For an O-ring seal with these elements present, the handbook advised hard rubber (80-84 durometer), a

limited squeeze (generally below 10%) and positioning away from the bearing surfaces.

Sealing the drill bit brought an additional problem: the buildup of lubricant pressure during drilling. The Parks Patent in 1959 observed that a rise in the bearing temperature during the rotation of the bit could cause a rise in lubricant pressure in the bearings and suggested a relief valve to counteract the pressure. A prior patent in 1946, the Christensen Patent, had recognized the problem and had suggested using "a grease fitting of a pressure relief type."

Smith International included relief valves in two experimental bits in the early 1960's. Records of the Smith experiments are sketchy because the first bit lasted for little more than an hour and the second lasted for only twelve hours. None of the Hughes' forerunners recognized that even after pressure compensators and vent holes were installed, the pressure within the bit would continue to exceed the drilling fluid pressure. Thus, lubrication would be lost, and wear would accelerate.

B. '928 Patent.

The '928 Patent by Galle, an employee of Hughes Tool Company, is entitled "Seal Means for Drill Bit Bearings" and uses illustrations and words to describe the use of an O-ring with a specified durometer hardness and compression to seal a journal or roller bearing.

Both the drawings and statement of what is being patented emphasize the use of the compressed O-ring seal in a journal bearing. Figures1-3A depict an O-ring with Galle's specifications in a roller bearing and the remaining six pictures show the O-ring in a journal bearing. Galle's statement concentrates on sealing a journal bearing; nine of the eleven items describe in detail the compression (at least 10%) and durometer hardness (70 or under) of an O-ring used to seal a journal bearing while only two claim the use of an O-ring in a roller bearing.

C. '195 Patent.

The '195 patent describes a recurrent problem with sealed rock bits: even when pressure compensators and vent holes attempt to equalize the pressure between the lubricant within the bearing and the drilling fluid surrounding the bit, pressure continues to build within the bit. Galle, the holder of this patent, also advises the use of a one-way pressure relief valve to counteract the buildup.

D. Adopted Findings of the Trial Court.

The trial court adopted almost verbatim and used as its opinion the proposed findings of Smith International.

The Ninth Circuit has repeatedly held that adopted findings require increased appellate scrutiny. *Norris Industries, Inc.* v. *Tappan Co.*, 599 F.2d 908, 909 (9th Cir. 1979); *Zweig* v. *Hearst Corp.*, 594 F.2d 1261, 1263 (9th Cir. 1979); *Photo Electronics* v. *England*, 581 F.2d 772, 777 (9th Cir. 1978); *Ceco Corp.* v. *Bliss Laughlin Industries, Inc.*, 557 F.2d 687, 689 (9th Cir. 1977); *Burgess Associates, Inc.* v. *Klingensmith*, 487 F.2d 321, 324-25 (9th Cir. 1973).

[1] Although the court in *Photo Electronics* found adopted findings appropriate in highly technical patent cases and maintained the clearly erroneous standard for reversal, it acknowledged that an adoption should give rise to heightened scrutiny.

> "Certainly the fact that the trial judge has adopted proposed findings does not, by itself, warrant reversal [footnote omitted]. But it does raise the possibility that there was insufficient independent evaluation of the evidence and may cause the losing party to believe that his position has not been given the consideration it deserves. These concerns have caused us to call for more careful scrutiny of adopted findings [citations omitted]." *Photo Electronics* v. *England*, 581 F.2d 772, 777 (9th Cir. 1978).

Thus, although the clearly erroneous standard applies, this court gives heightened scrutiny to the findings not prepared by the trial court.

E. Standards Applied to the Patents.

Title 35 U.S.C. § 282 states that a patent is presumed valid and that the burden of establishing invalidity lies with the challenging party. For patent to be declared invalid, the complaining party must establish that the subject matter was known or used by others (35 U.S.C. § 102), or that prior art would have made the subject matter, taken as a whole, obvious to a person of ordinary skill in the field (35 U.S.C. § 103).

1. '928 Patent.

[2] Smith did not meet its burden of proving the invalidity of the '928 patent. The subject matter was not known or used by others. Patent '928 was a combination patent comprised of several elements: an O-ring of specified hardness and squeeze used in a journal as well as a roller bearing under high speed and high temperature rotary conditions. Although the individual elements such as the O-ring and the journal bearing are well-known, their combination was not known.

[3] By statute and under case law, a combination patent is judged in terms of all of its components. Title 35 U.S.C. § 103 specifies that an inquiry into patentability must be directed toward "the subject matter as a whole." The Supreme Court in *United States* v. *Adams*, 383 U.S. 39, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966), upheld the validity of a patent for a nonacid, "wet" battery, all of whose components had been used or suggested individually before. The Court only required, as does the Ninth Circuit,[1] that the combination be synergistic and result in new

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[1] *Penn Intern. Industries* v. *Pennington Corp.*, 583 F.2d 1078, 1081 (9th Cir. 1973); *Photo Electronics Corp.* v. *England*, 581 F.2d 772, 775 (9th Cir. 1978); *Santa Fe-Pomeroy, Inc.* v. *P & Z Co., Inc.*, 569 F.2d 1084, 1094 (9th Cir. 1978); *Kamei-AutoKomfort* v. *Eurasian Automotive Products*, 553 F.2d 603, 608 (9th Cir. 1977).

and unexpected characteristics. The combination of elements in the '928 patent did produce a new and unexpected result — the first consistent 100-plus hour rock bit. The maximum previous lifespan had been 50-60 hours and was accomplished by the use of a seal also protected by patent.[2]

Judged as a whole, the Hughes patent was not anticipated by prior art. In combining an O-ring with a journal bearing, Galle tried something contrary to the leading industry authority on O-rings, the Parker Handbook. Although the previous patents cited by Smith contained some of the elements of the '928 patent, none contained all the components of the Galle approach.

[4] In addition, Hughes submitted with the patent application a list of 14 prior patents, including those mentioned by Smith, and none was found by the Patent Office to interfere with the granting of '928. The statutory presumption of patent validity is dissipated only "when the patent examiner is shown to have failed to consider pertinent prior art." *Photo Electronics Corp. v. England, supra,* 581 F.2d at 775.

Although Smith did not demonstrate obviousness or anticipation by prior art, the trial court ruled that Patent '928 was invalid. The trial court ruling was mistaken and, thus, clearly erroneous. The increased scrutiny mandated by the judge's wholesale adoption of Smith's proposed findings merely makes the trial court's mistake more obvious.

[5] The finding that Patent '928 did not clearly claim the patentable art is also wrong because the drawings and articulation of the subject matter of the patent are detailed and clear.

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[2] This patent for the "Belleville sale" was also owned by Hughes; Smith was found guiltty of infringement of the patent in *Smith Industries, Inc.* v. *Hughes Tool Company*, 396 F.2d 735 (5th Cir. 1968).

(2) '195 Patent.

[6] The '195 Patent is also a combination patent because it combines a pressure relief valve with a pressure compensator. Taken as a whole, the subject matter is not obvious because none of the patents used by Smith as examples of prior art involves a pressure compensator. Again, although Smith failed to meet its burden, the trial court ruled Patent '195 invalid, a mistaken and therefore clearly erroneous ruling.

[7] Contrary to the mistaken ruling of the trial court, Patent '195 also clearly stated the patentable art it was claiming.

CONCLUSION

The judgment is reversed, and Patents '928 and '195 are declared to be valid. The Hughes counterclaim for infringement is reinstated, and the cause is remanded for further proceedings on the counterclaim.

Reversed and remanded.

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

SMITH INTERNATIONAL, INC. etc.,

Plaintiff,

v.

HUGHES TOOL COMPANY, etc.,

Defendant.

No. CV-72-1231-MML

ORDER DENYING DEFENDANT'S MOTION FOR ENTRY OF JUDGMENT

The original complaint in this action was filed on June 2, 1972. Plaintiff, Smith International, Inc., sought a declaratory judgment as to the validity of Galle Patent No. 3,397,928 (the "928 patent"). Defendant Hughes Tool Co. counterclaimed alleging that plaintiff had infringed the 928 patent and Galle patent 3,476,195 (the "195 patent"). Plaintiff then asserted the invalidity of both the 928 patent and the 195 patent as an affirmative defense to the counterclaims. On November 30, 1979, after trial, the Honorable Robert Firth, District Judge, entered judgment in favor of plaintiff finding that all claims of both patents were invalid. As a result, Judge Firth dismissed the counterclaims for infringement.

The Ninth Circuit Court of Appeals, on January 7, 1982, reversed, holding that plaintiff had failed to meet its burden of proving the invalidity of the two patents. *Smith International, Inc.* v. *Hughes Tool Co.*, 664 F.2d 1373 (9th Cir. 1982). The appellate court concluded that it was clearly erroneous to rule that the patents were invalid and declared both patents to be valid. The Court reinstated defendant's counterclaims for infringement and remanded the case for further proceedings.

Defendant now moves for entry of judgment in its favor contending that plaintiff has conceded that it has infringed both patents. Defendant supports this contention by reference to two orders previously entered in this litigation. The first such order is the pretrial conference order lodged in March of 1975. That order, which is signed by both parties, provides:

> [t]he following facts are admitted and require no proof:
>
> * * * *
>
> (4) Claims 1, 2, and 7-10 of U.S. Patent 3,397928 if valid and enforceable, cover rock bits made and sold by Smith;
>
> (5) Claims 1, 2, 3 and 11 of U.S. Patent 3,476195 if valid and enforceable cover rock bits made and sold by Smith.

The parties also agreed in this order that certain issues of fact and law remained to be litigated at trial. However, none of these issues in any way raises the question of whether paintiff infringed either of the two patents or the extent of any such infringement.

Defendant also refers to a document captioned "Suppement to Pre-Trial Conference Order Lodged March 6, 1975." This order, which was filed on December 6, 1977, states in relevant part:

> Counsel for both parties having, prior to commencement of trial on November 28, 1977, been heard as to the natters set forth below:
>
> IT IS ORDERED:
>
> . . . It having been admitted that some rock bits of plaintiff are within the scope of some claims of U.S. Patent Nos. 3,397,928 and 3,476,195, any other issues relating to the matter of infringement are deferred to an accounting proceeding, if such proceeding takes place.

Defendant argues that on remand plaintiff should be bound by these "admissions" of infringement and that entry of judgment is appropriate.

The Court agrees that the language of these orders indicates that plaintiff has, in fact, conceded liability on the question of infringement and that plaintiff has agreed that determination of the scope of the infringement and the amount of damages could be deferred to an accounting proceeding. Nevertheless, the Court declines to enter judgment in favor of defendant at this time. The Court finds it appropriate, rather, to proceed to a determination of the nature and the scope of plaintiff's infringement before entering judgment. Recognition of the binding effect of the two pre-trial orders discussed above does mean, however, that plaintiff may not contend in subsequent proceedings that it has in no way infringed the two patents at issue. Also implicit in the Court's recognition of of the binding effect of these two orders is a rejection of the argument made repeatedly and energetically by plaintiff both in its papers and at oral argument that the appellate court "implicitly" incorporated additional features in the 928 patent claims. In particular, plaintiff has argued that the appellate court implicitly amended the claims of the 928 patent to include (a) use under high speed and high temperature rotary conditions and (b) a specified durometer hardness, as limitations on the claims. Plaintiff further contends that the appellate court implicitly held that absent such limitation, the claims of the 928 patent were overly broad and invalid. These arguments are not tenable. "Courts can neither broaden nor narrow the claims to give the patentee something different from what he has set forth." *Autogiro Co.* v. *United States*, 384 F.2d 391, 296 (Ct. Cl. 1967) cited in *Palmer* v. *Orthokinetics, Inc.*, 611 F.2d 316, 322 (9th Cir. 1980). The appellate court *explicitly* held that the 928 patent was valid. *Smith International, Inc., supra*, 664 F.2d at 1376-77. This explicit holding and the clear principle cited in *Palmer*, *supra*,

1982 order.[1] The Court, therefore, would deny plaintiff's motion if it were properly before it.

Defendant has filed two motions. The first is captioned: "Motion for Entry of Preliminary and Permanent Injunction or, in the Alternative, for Reconsideration of Order of October 6, 1982." In the October 6, 1982 order the Court denied defendant's request that an injunction issue on the grounds that the limited admission of infringement by plaintiff was too vague to permit the Court to structure an injunction meeting the requirements of F.R.Civ.P. 65(d). Defendant's present motion attempts to overcome this hurdle by (a) presenting evidence which defendant contends establishes a well defined area of infringement by plaintiff, and (b) presenting narrowly worded injunction.

Defendant's presentation of evidence reveals that this motion is, in fact, a motion for partial summary judgment rather than a renewal of the previous motion or a motion for reconsideration. Defendant presents evidence which it contends establishes that plaintiff's "F" series bits infringe claim one of the '928 patent.[2] Unfortunately, defendant has not brought this motion as a motion for partial summary judgment. Thus, plaintiff cannot be faulted for failing to present evidence in opposition to defendant's motion. It is necessary to determine the extent of plaintiff's infringement in a judicial proceeding — either by trial or by motion for summary judgment — before an injunction can

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[1] Plaintiff notes that two of the claims of the '928 patent explicitly limit the durometer hardness to "not over substantially seventy." This is not inconsistent with the October 6, 1982 order. That order simply held that the appellate court did nothing more than uphold the validity of the '928 patent as claimed and did not implicitly read limitations as to use or durometer hardness into claims which contained no such explicit limitation.

[2] Much of the evidence presented was originally presented at trial in 1977. The trial court, however, dismissed defendant's claims for infringement and, therefore, made no findings as to infringement based on the evidence before it.

issue. It is quite possible that the evidence as to the extent of plaintiff's infringement is clear and that this determination will be relatively straightforward in light of the Court's rejection of plaintiff's arguments that the appellate court transformed the scope of the '928 patent. Nevertheless, this step must be taken first. The Court, therefore, denies defendant's motion.[3]

Defendant also requests the Court to order plaintiff to provide a statement of account in which plaintiff reveals the extent of its infringement in terms of the number of infringing devices sold and the gains and profits derived from these sales. In light of the present status of these proceedings, as discussed in the preceding paragraph, this motion is premature. The Court must first determine which of plaintiff's products infringes defendant's patents.

The Court is prepared to assist the parties in every way possible to move this case forward. Defendant, in its status report filed on July 15, 1982 suggested a discovery schedule upon the premise that the Court would order plaintiff to prepare a statement of account. That premise is incorrect in light of the present order. The Court has, to date, not had the benefit of a status report from plaintiff. Now that the Court has rejected certain arguments by plaintiff it would seem appropriate to set this matter down for a status conference on January 10, 1983, at 10:00 a.m. The parties should meet and confer and present to the Court a joint status report on or before January 3, 1983 setting forth in precise terms their thoughts as to the discovery which remains to be taken and the pre-trial schedule in this litigation. The parties should also set forth in detail any disagreements as to the scope of the issues to be tried as well as the extent to

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[3] In denying defendant's motion the Court does not accept plaintiff's argument that "there has been no determination of infringement in light of the interpretation of the claims made by the Ninth Circuit." As noted above, the Court rejects this line of reasoning entirely.

which the parties will be able to stipulate to the facts in this dispute. The Court will set a discovery cut-off date, pre-trial conference date and, if possible, a trial date at the January 10, 1983 status conference.

IT IS SO ORDERED.

IT IS FURTHER ORDERED that the Clerk shall serve, by United States Mail, copies of this Order on counsel for the parties in this matter.

Dated: December 15, 1982.

/s/ MALCOLM M. LUCAS
MALCOLM M. LUCAS
United States District Judge

[718 F.2d 1573]

SMITH INTERNATIONAL, INC., a
California Corporation,
Plaintiff-Appellee,

v.

HUGHES TOOL COMPANY, a Delaware
Corporation, Defendant-Appellant.

No. 83-677.

United States Court of Appeals,
Federal Circuit.

Oct. 6, 1983.

Certiorari Denied Nov. 28, 1983.
See 104 S.Ct. 493.

Preliminary injunctive relief was sought against continuing infringement of drill bit patent. The United States District Court for the Central District of California denied motion for preliminary injunctive relief, and patent owner appealed. The Court of Appeals, Skelton, Senior Circuit Judge, held that: (1) where alleged patent infringer never denied that its drill bits infringed claims of competitor's patents, but relied solely on contention that patents were invalid, inclusion of admissions of infringement in pretrial orders amounted to adjudication of infringement, which became final and conclusive, absent appeal as to that issue, and (2) where alleged patent infringer stated its intention to continue infringement, relying solely on invalidity of the patents, but patents were subsequently determined on appeal to be valid, irreparable harm would be presumed from strong showing of validity and infringement, warranting preliminary injunctive relief.

Reversed and remanded with instructions.

See also, 664 F.2d 1373.

1. Patents 1

Grant of patent is grant of right to invoke state's power in order to exclude others from utilizing patentee's discovery without his consent. 35 U.S.C.A. §§ 154, 261, 283; U.S.C.A. Const. Art.1, § 8, cl. 8.

2. Patents 293

Grant or denial of preliminary injunction in patent case is matter committed to sound discretion of the district court. 35 U.S.C.A. § 283.

3. Injunction 132

Preliminary injunction will normally issue only for purpose of preserving status quo and protecting respective rights of parties pending final disposition of the litigation.

4. Patents 300

In patent case, party seeking preliminary injunctive relief is required to demonstrate that he will suffer immediate irreparable harm if injunction is not granted. 35 U.S.C.A. § 283.

5. Patents 300

In determining whether to issue preliminary injunctive relief in patent case, court should take into account, where relevant, possibility of harm to other interested persons from grant or denial of injunction, together with public interest. 35 U.S.C.A. § 283.

6. Federal Courts 815

One who has been denied preliminary injunctive relief must meet heavy burden of showing on appeal that district court abused its discretion, committed error of law, or seriously misjudged the evidence.

7. Injunction 135

District court's discretion in granting preliminary injunctions is not absolute, and must be measured against standards governing issuance of injunctions. Fed. Rules Civ. Proc. Rule 65(d), 28 U.S.C.A.

8. Injunction 134

Where case for temporary injunction is clearly made out, it is not open to trial court to deny the remedy. Fed. Rules Civ. Proc. Rule 65(d), 28 U.S.C.A.

9. Federal Courts 1137

Court of Appeals of the Federal Circuit has exclusive jurisdiction over appeals from orders granting or denying injunctions in patent cases. 28 U.S.C.A. § 1292(a)(1), (c)(1).

10. Patents 165(2), 226.6

Metes and bounds of patent right are defined by claims of the patent, and, if accused matter falls within the claims, literal infringement is made out; therefore, admission of "claim coverage" is admission of literal infringement.

11. Patents 327(13)

Where alleged patent infringer never denied that its drill bits infringed claims of patent, but relied solely on contention that patents were invalid, inclusion of admissions of infringement in pretrial orders amounted to adjudication of infringement and, those orders having been merged into final declaratory judgment of the district court, adjudication became final and conclusive, absent appeal as to issue of fact of infringement, as opposed to validity of patents. Fed. Rules Civ. Proc. Rules 8(d), 16, 28 U.S.C.A.

12. Patents 298

Where patent infringement had been admitted and adjudication thereof had become final and conclusive, showing of extent of infringement was not prerequisite to issuance of preliminary

injunction; such determination would better be left for accounting proceeding. 35 U.S.C.A. § 283; Fed. Rules Civ. Proc. Rule 65(d), 28 U.S.C.A.

13. Patents 300

Where patent validity and continuing infringement have been clearly established, immediate irreparable harm is presumed, for purposes of preliminary injunctive relief. 35 U.S.C.A. § 283; Fed. Rules Civ. Proc. Rule 65(d), 28 U.S.C.A.

14. Patents 300

Where manufacturer of drill bits admitted that bits came within claims of competitor's patents, and stated its intention to continue infringement, relying solely on invalidity of the patents, but patents were subsequently determined on appeal to be valid, irreparable harm would be presumed from strong showing of validity and infringement, warranting preliminary injunctive relief. Fed. Rules Civ. Proc. Rule 65(d), 28 U.S.C.A.; 35 U.S.C.A. § 283.

Britton A. Davis, Chicago, Ill., argued for defendant-appellant. With him on brief were Edward A. Haight, Dorsey L. Baker, Chicago, Ill., Robert A. Felsman, Fort Worth, Tex., and David Brice Toy, Los Angeles, Cal.

James W. Geriak, Los Angeles, Cal., argued for plaintiff-appellee. With him on brief were Douglas E. Olson, Robert C. Weiss, Coe A. Bloomberg, Los Angeles, Cal., and John W. Schneller, Washington, D.C.

Before BENNETT, Circuit Judge, SKELTON, Senior Circuit Judge, and MILLER, Circuit Judge.

SKELTON, Senior Circuit Judge.

This is an appeal from an order of the United States District Court for the Central District of California, which denied a motion of defendant-appellant Hughes Tool Company (Hughes)

for the entry of a preliminary injunction against plaintiff-appellee, Smith International, Inc. (Smith) to prevent the further infringement by Smith of two patents owned by Hughes, which the Ninth Circuit Court of Appeals had previously declared valid, and which Smith had admitted it had infringed and was continuing to infringe. For reasons stated below, we reverse the decision of the district court and remand the case with instructions to issue the preliminary injunction.

BACKGROUND

This action has a rather lengthy history, extending over a period of some eleven years. It is necessary to trace this history carefully, because some of the events that transpired during the course of the litigation are persuasive as to the proper disposition of the case. The original complaint was filed by Smith on June 2, 1972, when it brought a declaratory judgment action contesting the validity of Galle Patent No. 3,397,928 (the "928 patent"), issued to Hughes as assignee. Hughes counterclaimed for damages, alleging that Smith had infringed the '928 patent, as well as Galle Patent No. 3,476,195 (the "195 patent"), which was also issued to Hughes as assignee. Smith then asserted the invalidity of both the above patents as an affirmative defense to the counterclaims.

Both of the patents at issue in the declaratory judgment action involve the design of "rock bits," which are earth boring tools used in the rotary drilling of oil and gas wells. The bits were designed by Edward M. Galle, an employee of Hughes, in an effort to extend the lifespan of rock bits exposed to the high temperatures and stresses created in the drilling of oil wells. This goal was achieved by mounting the bit cutting elements on a journal or roller bearings and sealing the bearings with an O-ring compressed by at least ten percent. A one-way pressure relief valve was employed to prevent pressure buildup in the sealed bit. These design changes resulted in a substantial

lengthening of the lifespan of the bits. The '928 patent was granted in 1968 and and the '195 patent in 1969.

In its "Answer and Counterclaims Including Supplemental Counterclaim" in the declaratory judgment action dated June 9, 1976, Hughes made the following allegation in pertinent part:

> "12. Plaintiff has infringed, and still is infringing each of said letters patent Nos. 3,397,928, 3,476,195 . . . by making, selling and using rock bits, including rock bits identified as plaintiff's "F" series solid journal bearing bits embodying each of the patented inventions and will continue to do so unless enjoined by this Court."

In "Plaintiff's Answer to Defendant's Counterclaim," dated July 2, 1976, Smith answered the above allegation:

> "Answering paragraph 12, plaintiff admits that it has manufactured and sold, and is still manufacturing and selling devices coming within the terms of certain of the claims of said U.S. Patents 3,397,928 and 3,476,195, but denies that it is infringing any of defendant's rights because said patents are invalid and therefore incapable of infringement." Thus, Smith's defense to the counterclaims was based solely upon its contention of invalidity, while it admitted that it manufactured and sold devices coming within the claims of Hughes' patents. This position is further reflected by the following portions of a Pre-Trial Conference Order, dated March 6, 1975:

> "The following facts are admitted and require no proof:

* * * * * *

III

* * * * * *

> 4. Claims 1, 2 and 7-10 of U.S. Patent 3,397,928, if valid and enforceable, cover rock bits made and sold by Smith.
>
> 5. Claims 1, 2, 3 and 11 of U.S. Patent 3,476,195, if valid and enforceable, cover rock bits made and sold by Smith.

IV

The parties have no reservations with respect to the admitted facts specified in paragraph III."

A Supplement to the Pre-Trial Conference Order dated December 1977, contains the following provision:

"3. It having been admitted that some rock bits of plaintiff are within the scope of some claims of U.S. Patent Nos. 3,397,928 and 3,476,195, any other issues relating to the matter of infringement, except as set forth in item 2 herein, are deferred to an accounting proceeding, if such proceeding takes place."

The issues as framed by the pleadings and pre-trial orders included several questions concerning the validity of the subject patents, and the question of whether Smith's infringement was willful and deliberate, but the *fact* of infringement, if the patents were determined to be valid, was not an issue to be tried. However, at trial, some revealing information was proved about the design and construction of the Smith "F series" bit. Smith's Vice President of Research and Development, Lloyd Garner, testified that he was aware of the Hughes patents, and that he instructed a Smith engineer, William Robinson, to design a bit which contained features similar to those of the subject patents. He also testified that he was aware of the possibility of infringing the patents by making these bits. Robinson testified that as a result of those instructions the "F series" bit was designed, which included the same features as the Hughes bit. He stated that Garner told him to design a bit similar to the Hughes bit.

On November 30, 1979, the United States District Court for the Central District of California held that the '928 patent and the '195 patent were invalid and dismissed Hughes' counterclaims. The Court of Appeals for the Ninth Circuit reversed this decision, declaring both patents to be valid, reinstating Hughes' counterclaim for infringement, and remanding the cause for further proceedings on the counterclaim. *Smith International,*

Inc. v. *Hughes Tool Company*, 664 F.2d 1373 (9th Cir.), *cert. denied*, 456 U.S. 976, 102 S.Ct. 2242, 72 L.Ed.2d 851 (1982).

Following remand to the district court, Hughes moved for entry of judgment in its favor contending that Smith had admitted infringement of both patents. Hughes also sought a preliminary injunction to prevent further infringement by Smith. The district court declined to enter judgment, but acknowledged Smith's admission of infringement in the following statement in its order of October 6, 1982.

> The Court agrees that the language of these orders [the previous pre-trial orders] indicates that plaintiff has, in fact, conceded liability on the question of infringement and that plaintiff has agreed that determination of the scope of the infringement and the amount of damages could be deferred to an accounting proceeding. Nevertheless, the Court declines to enter judgment in favor of defendant at this time. The Court finds it appropriate, rather, to proceed to a determination of the nature and the scope of plaintiff's infringement before entering judgment. Recognition of the binding effect of the two pre-trial orders discussed above does mean, however, that plaintiff may not contend in subsequent proceedings that it has in no way infringed the two patents at issue.

The court denied Hughes' request for a preliminary injunction, because it considered Smith's admission of infringement to be too general to meet the requirement of specificity for injunctive relief under Fed.R. Civ.P. 65(d). Hughes sought to overcome this defect by filing a "Motion for Preliminary and Permanent Injunction, or in the Alternative, for Reconsideration of Order of October 6, 1982." In a proposed order, it recited Claim 1 of the '928 patent and stated that Smith had infringed the patent "by making, using and selling rock bits of the type specified in the aforesaid Claim 1." The proposed order also recited the fact that the Ninth Circuit Court had declared the '928 patent to be valid and enforceable, and stated that continued infringement by Smith would result in irreparable harm to Hughes. In addition,

Hughes presented portions of the record from the trial, which had not been considered by the court when it denied Hughes' first motion for an injunction. This evidence was intended to demonstrate the scope of infringement by Smith.

Because of the presentation of evidence, the district court viewed the motion as one for partial summary judgment, apparently on the issue of the *extent* of Smith's infringement. Because the motion was not presented *as* one for summary judgment, the court declined to grant the motion, holding in an order dated December 15, 1982, that the extent of Smith's infringement must be determined by trial or motion for summary judgment before an injunction could issue. However, the court specifically rejected Smith's argument that there had been no determination of infringement. Hughes has appealed from this order denying its motion for a preliminary injunction.

GROUNDS FOR GRANTING PRELIMINARY INJUNCTIONS

[1] The constitutional provision, which is the basis of patent law, grants Congress the power to award "inventors the exclusive right to their . . . discoveries." U.S. Const. art. 1, § 8, cl. 8. Congress has exercised this power by enacting the Patent Statute, which provides that patents shall have the attributes of personal property (35 U.S.C. § 261) and grants to the patentee the right to exclude others from making, using or selling the invention for a period of seventeen years (35 U.S.C. § 154). The grant of a patent is the grant of the right to invoke the state's power in order to exclude others from utilizing the patentee's discovery without his consent. *Zenith Radio Corp.* v. *Hazeltine Research*, 395 U.S. 100, 135, 89 S.Ct. 1562, 1582, 23 L.Ed.2d 129 (1969); *Sears, Roebuck Co.* v. *Stiffel Co.*, 376 U.S. 225, 229, 84 S.Ct. 784, 787, 11 L.Ed.2d 661, *reh. denied*, 376 U.S. 973, 84 S.Ct. 1131, 12 L.Ed.2d 87 (1964); *Continental Paper Bag Co.* v. *Eastern Paper Bag Co.*, 210 U.S. 405, 430, 28 S.Ct. 748, 756, 52 L.Ed. 1122 (1908). Protection of this right to exclude has been

provided by Congress through 35 U.S.C. § 283, *inter alia*, which provides that injunctions may be granted under the principles of equity to "prevent the violation of any rights secured by patent, on such terms as the court deems reasonable." Without this injunctive power of the courts, the right to exclude granted by the patent would be diminished, and the express purpose of the Constitution and Congress, to promote the progress of the useful arts, would be seriously undermined. The patent owner would lack much of the "leverage," afforded by the right to exclude, to enjoy the full value of his invention in the market place. Without the right to obtain an injunction, the right to exclude granted to the patentee would have only a fraction of the value it was intended to have, and would no longer be as great an incentive to engage in the toils of scientific and technological research. *See* I. Kayton, *Kayton on Patents*, ch.1, pp.17-20 (1979).

[2,3] However, courts have over the years developed a reluctance to resort to preliminary injunctions in patent infringement cases, and have constructed a rather strict standard for the granting of this form of equitable relief. It is generally recognized that the grant or denial of a preliminary injunction in a patent case is a matter committed to the sound discretion of the district court. *Pacific Cage and Screen Co.* v. *Continental Cage Corp.*, 259 F.2d 87, 88 (9th Cir. 1958); *Superior Electric Company* v. *General Radio Corp.*, 194 F.Supp. 339 (D.N.J.) *aff'd*, 321 F.2d 857 (3rd Cir.), *cert. denied*, 376 U.S. 938, 84 S.Ct. 793, 11 L.Ed.2d 659, *reh. denied*, 376 U.S. 973, 84 S.Ct. 1134, 12 L.Ed.2d 88 (1964). The standard for granting such relief has been characterized as "unusually stringent." *Rohm & Haas Co.* v. *Mobil Oil Co.*, 525 F.Supp. 1298, 1302 (D.Del. 1981). A preliminary injunction will normally issue only for the purpose of preserving the status quo and protecting the respective rights of the parties pending final disposition of the litigation. *Superior Electric Company* v. *General Radio Corp., supra.* The usual requirement of a showing of probability of success on

the merits before a preliminary injunction will issue has historically been even stronger in a patent case. Besides having to prove title to the patent, it has been stated as a general proposition that the movant must show that the patent is beyond question valid and infringed. *Mayview Corp.* v. *Rodstein*, 480 F.2d 714, 717 (9th Cir. 1973); *Bose Corporation* v. *Linear Design Labs, Inc.*, 467 F.2d 304, 307 (2d Cir. 1972); *Eli Lilly and Company* v. *Generix Drug Sales, Inc.*, 460 F.2d 1096, 1099 (5th Cir. 1972); *Carter-Wallace, Inc.* v. *Davis-Edwards Pharmacal Corp.*, 443 F.2d 867, 871 (2d Cir.), *cert. denied*, 412 U.S. 929, 93 S.Ct. 2753, 37 L.Ed.2d 156 (1973). In order to meet the burden of showing validity, the movant has sometimes been required to show either that his patent has previously been adjudicated valid, that there has been public acquiescence to its validity, or that there is conclusive direct technical evidence proving its validity. *Carter Wallace, Inc.* v. *Davis Edwards Pharmacal Corp., supra*, at 871-874; *Jenn-Air Corporation* v. *Modern Maid Company*, 499 F.Supp. 320, 323 (D.Del.), *aff'd*, 649 F.2d 1068 (3rd Cir. 1981). However, other courts have employed a less stringent standard of proof on the issue of validity. *See Eli Lilly and Co.* v. *Premo Pharmaceutical Labs.*, 630 F.2d 120, 136 (3rd. Cir.), *cert. denied*, 449 U.S. 1014, 101 S.Ct. 573, 66 L.Ed.2d 473 (1980); *Tyrolean Handbag Co.* v. *Empress Hand Bag, Inc.*, 122 F.Supp. 299, 302 (S.D.N.Y. 1954). The basis for the more severe rule appears to be both a distrust of and unfamiliarity with patent issues and a belief that the ex parte examination by the Patent and Trademark Office is inherently unreliable. Duft, *Patent Preliminary Injunctions and the United States Court of Appeals for the Federal Circuit*, 65 J.Pat.Off.Soc'y #131 (1983).[1]

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[1] It has been asserted that a hearing on a motion for a preliminary injunction is not the proper place to make a showing on absolute proof of likelihood of success. *See*, Duft, *supra*. However, we do not find it necessary to decide that question, nor the question of the

[4] As with preliminary injunctions in other types of cases, the movant is also required to demonstrate in a patent case that he will suffer immediate irreparable harm if the injunction is not granted. *Singer Co.* v. *P. R. Mallory Co., Inc.*, 671 F.2d 232, 234 (7th Cir. 1982). Some courts refuse to find irreparable injury where the alleged infringer is solvent and money will adequately compensate the injury. *Nuclear-Chicago Corp.* v. *Nuclear Data, Inc.*, 465 F.2d 428 (7th Cir. 1972); *Rohm & Haas Co.* v. *Mobil Oil Corp., supra* at 1307; *Jenn-Air Corp.* v. *Modern Maid Co., supra* at 333. However, at least one court is of the opinion that where the showing on patent validity is very strong, invasion of the inventors right to exclude granted by the patent laws should be sufficient irreparable harm without a showing that the infringer is financially irresponsible. *Zenith Laboratories* v. *Eli Lilly and Co.*, 460 F.Supp. 812 (D.N.J. 1978).

[5] Finally, where relevant, the court should take into account both the possibility of harm to other interested persons from the grant or denial of the injunction, and the public interest. *Eli Lilly and Co.* v. *Premo Pharmaceutical Labs, supra* at 136. In reaching its decision, the district court must consider the above factors and balance all of the elements. No one element will necessarily be dispositive of the case. *Id.* at 136.

[6-9] On appeal, the scope of review of a district court's decision involving the denial of an injunction is narrow. One denied a preliminary injunction must meet the heavy burden of showing that the district court abused its discretion, committed an error of law, or seriously misjudged the evidence. *Eli Lilly and Co.* v. *Premo Pharmaceutical Labs., supra* at 136. The district court's discretion is not absolute, however, and must be measured against the standards governing the issuance of injunctions. *Singer Co.* v. *P. R. Mallory Co., Inc., supra* at 234;

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proper standard of proof, because we find that Hughes has met even the more stringent standard.

Fox Valley Harvestore, Inc. v. *A. O. Smith Harvestore Products, Inc.*, 545 F.2d 1096, 1097 (7th Cir. 1976). Where a case for a temporary injunction is clearly made out, it is not open to the trial court to deny the remedy. *Western Electric Co.* v. *Cinema Supplies, Inc.*, 80 F.2d 106, 110 (8th Cir. 1935). It is under this standard of review that we now undertake to examine the District Court's denial of a preliminary injunction in the instant case, being mindful of the fact that we now have exclusive jurisdiction over appeals from orders granting or denying injunctions in patent cases. 28 U.S.C. 1292(a)(1) and (c)(1), *as amended by* The Federal Courts Improvement Act of 1982, Pub.L. No.97-164, § 125, 96 Stat. 36.

THE VALIDITY OF THE HUGHES PATENTS

As noted above, the Court of Appeals for the Ninth Circuit held that both the '928 patent and the '195 patent were valid, reversing the district court's holdings to the contrary. *Smith International, Inc.* v. *Hughes Tool Co., supra.* This holding was made despite arguments of invalidity by Smith on the basis of obviousness under 35 U.S.C. § 103, anticipation by prior art under 35 U.S.C. § 102, and failure to properly claim the invention under 35 U.S.C. § 112. The Ninth Circuit Court had the benefit of the contentions and arguments of Smith, a party whose interest animated its search for the best prior art and case law to support its position of invalidity, and still the court found the patents valid. The United States Supreme Court denied certiorari. Thus, the validity of the Hughes patents has been adjudicated by a competent appellate court, which we assume considered all possible grounds for invalidating the patents, and yet it rejected them all.

THE INFRINGEMENT OF THE HUGHES PATENTS

[10] In its brief and in oral arguments, Smith steadfastly denied that it had infringed the Hughes patents. It argued that there has been no finding of infringement by any court, that its

former admissions are stale, and that, in any event, the admissions did not specify any particular product of Smith that infringed the patents, but only admitted "claim coverage" by unspecified devices.[2]

[11] Smith's arguments are unconvincing. In our view, the record establishes the *fact* of infringement beyond all question. As the pleadings quoted above reveal, Smith never denied that its F series bits infringed the claims of the Hughes patents. It never denied that it would continue to make and sell these bits unless enjoined by the court. Instead, it relied solely upon its contention that the patents were invalid. As the Pre-Trial Conference Order reveals, Smith had no reservation about admitting that it manufactured and sold rock bits coming within the claims of the Hughes patents. The Ninth Circuit Court's decision removed any question about the validity and enforceability of the patents. Therefore, we have before us a clear admission that Smith makes and sells bits falling within the claims of Hughes' patents. Smith's failure to deny Hughes' allegations that Smith's F series bits infringed the Hughes' patents, and that it intended to continue making and selling them also amounts to an admission of infringement under Fed. R. Civ. P. 8(d). Even the district court recognized that Smith had "conceded liability on the issue of infringement." It stated that Smith would not be allowed to contend that it had in no way infringed the patents. Order of October 6, 1982.

The inclusion of Smith's admissions in the district court's pretrial orders amounts to an adjudication that Smith had infringed

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[2] It is elementary that the metes and bounds of a patent right are defined by the claims of the patent, and that if the accused matter falls within the claims, literal infringement is made out. *Laser Alignment, Inc.* v. *Woodruff & Sons, Inc.*, 491 F.2d 866 (7th Cir.), *cert. denied*, 419 U.S. 874, 95 S.Ct. 135, 42 L.Ed.2d 113 (1974); *Strumkis* v. *U.S.*, 200 Ct.Cl. 668, 474 F.2d 623, *cert. denied*, 414 U.S. 1067, 94 S.Ct. 576, 38 L.Ed.2d 472, *reh. denied*, 414 U.S. 1147, 94 S.Ct. 902, 39 L.Ed.2d 103 (1974). Therefore, an admission of "claim coverage" is an admission of literal infringement.

the patents. Under Fed. R. Civ. P. 16, those orders controlled the subsequent course of action, unless modified. Here, no modification occurred. Those orders were merged into the final declaratory judgment of the district court. *Cohen* v. *Beneficial Loan Corp.*, 337 U.S. 541, 546, 69 S.Ct. 1221, 1225, 93 L.Ed. 1528 (1949). No issue relating to infringement was appealed by Smith to the Ninth Circuit Court, thus rendering the district court's adjudication of infringement final and conclusive. *Richardson* v. *Communications Workers of Amer. AFL-CIO*, 486 F.2d 801, 804 (8th Cir. 1973); *Atchison, Topeka and Santa Fe Railway Co.* v. *Jackson*, 235 F.2d 390, 392 (10th Cir. 1956). We see no reason why any further adjudication on the *fact* of infringement is needed.[3]

[12] The district court, while recognizing that infringement occurred, nonetheless declined to grant an injunction until the *extent* of the infringement was shown. We have found no case in our research that places such a burden on one seeking a preliminary injunction in a patent infringement case, and none has been cited to us. Such a requirement would make the standard practically impossible to meet. This inquiry is better left for the accounting proceeding, and the district court erred in making such a requirement of Hughes.[4]

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[3] The reinstatement of the Hughes counterclaim by the Ninth Circuit Court, and its remand for further proceedings, in no way indicates that the court viewed the fact of infringement as an open question. In our view, the "further proceedings" provision in the remand order refers to an accounting proceeding and a consideration of the matter of a permanent injunction. No further proceedings are necessary on the issue of whether infringement occurred.

[4] As noted above, the district court viewed the Hughes motion as one for summary judgment because Hughes presented evidence on the scope of infringement. Had the district court not stated in its previous order of October 6, 1982, that it would not grant an injunction before determining the scope of infringement, Hughes would have had no reason to present such evidence. The source of confusion about the Hughes motion was the district court's erroneous requirement of proof of the extent of infringement.

Thus, the decisions on validity and infringement weigh heavily in Hughes' favor on the injunction issue before us. This is so even though these two issues, validity and infringement, have historically made preliminary injunctions difficult to obtain in patent cases.

IRREPARABLE HARM

[13] As mentioned above, some courts will not find irreparable harm to exist without a showing of financial irresponsibility. In this case, no such showing exists. However, none of the cases we have reviewed in which injunctions were denied for a lack of irreparable harm involved such a strong showing of validity and infringement as exists in the instant case.[5] Courts faced with strong showings of validity and infringement, on the other hand, have found irreparable harm from continued infringement of a valid patent. *Zenith Laboratories, Inc.* v. *Eli Lilly and Co., supra* at 825 (where validity is very strong, invasion of the right to exclude is sufficient irreparable harm); *Teledyne Industries, Inc.* v. *Windmere Products, Inc.*, 433 F.Supp. 710, 741 (S.D.Fla. 1977) (to permit infringement during pendency of suit would be to grant a license valid as long as the infringer could contest the suit, and encourage others to infringe as well). We agree with the reasoning in these cases. The very nature of the patent right is the right to exclude others. Once the patentee's patents have been held to be valid and infringed, he should be entitled to the full enjoyment and protection of his patent rights. The infringer should not be allowed to continue his infringement in the face of such a holding. A court should not be reluctant to use its equity powers once a party has so clearly established his patent rights. We hold that where validity and continuing

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[5] *See generally, Singer Co.* v. *P.R. Mallory Co., Inc., supra; Rohm & Haas Co.* v. *Mobil Oil Corp., supra, Frommelt Industries, Inc.* v. *W.B. McGuire Co., Inc.*, 504 F.Supp. 1180 (N.D.N.Y. 1981); *Jenn-Air Corporation* v. *Modern Maid Co., supra; Superior Electric Co.* v. *General Radio Corp., supra.*

infringement[6] have been clearly established, as in this case, immediately irreparable harm is presumed.[7] To hold otherwise would be contrary to the public policy underlying the patent laws.

[14] Upon balancing the requisite factors, we hold that the district court erred in denying Hughes' motion for a preliminary injunction. It committed a clear error of law in requiring proof of the extent of infringement prior to granting the preliminary injunction. The extent of infringement relates to damages and is a question to be determined at the trial on the merits. In addition, there do not appear to be any equitable considerations in this case that could in any way offset the strong showing of validity and infringement made by Hughes, coupled with the presumption of irreparable harm. Smith argues that public policy and the balance of hardship are in its favor, because it is a substantial competitor and has on hand a large inventory of the rock bits at issue here, and it would be unfair to disrupt its activities with an injunction. But it is clearly established that Smith knew of the Hughes patents when it designed the F series bits and took a calculated risk that it might infringe those patents. It instituted this action in an attempt to invalidate its competitor's patents, and, having failed, it will not now be heard to say that public policy is in its favor. To the contrary, public

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[6] Even if Smith's admissions are not interpreted as indicating an intention to infringe in the future, the showing of past infringement has been strong enough to justify a finding of probable future infringement. *See Aluminum Extrusion Company* v. *Soule Steel Company*, 260 F.Supp. 221, 225 (C.D.Cal. 1966).

[7] This is the rule in copyright cases. *See*, Duft, *supra* at n. 64 and cases cited therein. Our holding on this issue does not abrogate the traditional requirement of a showing of irreparable harm by one seeking a preliminary injunction. As noted above, the trial court should balance the requisite factors. In cases where the showing of validity and infringement is less forceful than it is here, or in cases where equitable or public policy considerations are in favor of the infringer, a movant would have to make a stronger showing of irreparable harm in order to tip the balance of equity in his favor.

policy favors protection of the rights secured by the valid patents. Under these circumstances, we hold that the denial of a preliminary injunction was based on a clear error of law and constituted an abuse of discretion.[8]

CONCLUSION

The decision of the district court is reversed, and the cause is remanded with instructions to issue an appropriate preliminary injunction enjoining Smith International, Inc. from infringing claim 1 of the '928 patent on such terms as are deemed proper by the district court.

REVERSED AND REMANDED.

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[8] Though the parties and the district court treated the matter as involving a "preliminary" injunction, and we have reviewed the case in those terms, we intend no implication that a patentee is not entitled to a permanent injunction against the infringer in the case upon final judicial determination that the involved patent is valid and has been infringed by that infringer. Such an injunction prohibits infringement by any product, not just those involved in the original suit. The burden of avoiding infringement at the risk of contempt falls upon the one enjoined.

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

SMITH INTERNATIONAL, INC., etc.,

Plaintiff,

v.

HUGHES TOOL COMPANY, etc.,

Defendant.

No. CV-72-1231-MML

ORDER DENYING (1) SMITH'S MOTION FOR ORDER GRANTING PARTIAL SUMMARY JUDGMENT OR IN THE ALTERNATIVE, A SEPARATE TRIAL; (2) SMITH'S MOTION FOR ORDER DISSOLVING PRELIMINARY INJUNCTION

Smith International, Inc. has moved the Court to grant partial summary judgment, or in the alternative a separate trial, and to dissolve the preliminary injunction issued against it. The motions were separately heard before the Court, the Honorable Malcolm M. Lucas, District Judge, presiding, but are appropriately decided together inasmuch as cognate arguments are made in their support. Having duly considered the papers submitted and the oral argument of counsel, the Court hereby denies the motions.

I. BACKGROUND.

The instant motions brought by Smith International, Inc. (Smith) attack a patent owned by Hughes Tool Co. (Hughes), Galle Patent No. 3,397,928 ('928 patent), which was granted in 1968. The motions are set against a background which can fairly be described as a marathon of litigation.

Smith began this action in 1972 when it brought a declaratory judgment complaint contesting the validity of the '928 patent. Hughes counterclaimed, alleging infringement of '928 and

another Galle patent, Patent No. 3,476,195, both used in the manufacture of rotary bits employed in drilling oil and gas wells. In 1979, Judge Firth of this Court held that both patents were invalid and dismissed the counterclaims. Upon appeal the Ninth Circuit reversed, holding that both patents are valid, and remanded the action for further proceedings on the counterclaims. *Smith International, Inc.* v. *Hughes Tool Co.*, 664 F.2d 1373 (9th Cir.), *cert. denied*, 456 U.S. 976 (1982). Back in this Court, Hughes sought both an accounting and a preliminary injunction against further infringement of '928, contending that Smith had admitted infringement. The Court denied Hughes' motion for injunctive relief, holding that the extent of Smith's infringement had to be determined as the predicate of the injunction. Hughes thereupon appealed to the Federal Circuit. In view of the adjudication of the validity of the '928 patent by the Ninth Circuit and what the Federal Circuit saw as the established fact of infringement, the Federal Circuit ordered this Court to issue an injunction. *Smith International, Inc.* v. *Hughes Tool Co.*, 718 F.2d 1573 (Fed. Cir.), *cert. denied*, 104 S.Ct. 493 (1983). Upon receipt of the mandate this Court issued the preliminary injunction. Smith now contends that it is entitled to partial summary adjudication in its favor on the enforceability of '928 and to an order dissolving the preliminary injunction. Both of Smith's motions rest on an argument that Hughes committed fraud on the Patent Office in procuring '928.

II. DISCUSSION

A. The Law of the Case

The Court can properly reach the merits of Smith's motions only if the law of the case permits it to do so. Thus, the doctrine is separately discussed here as a controlling threshold issue.

In general terms, the law of the case doctrine simply expresses the reluctance of most courts to reopen matters they have already decided. 18 C. Wright, A. Miller & E. Cooper, *Federal Practice and Procedure* § 4478 (1981). Under the doctrine, most

courts require that a reopening of a question be justified by, e.g., an intervening change in controlling law, the availability of new evidence, or the need to correct a manifest error. *Id.* Applied to the problem of adherence by a trial court to an appellate court's mandate, however, the doctrine is expressed differently. Trial courts must honor the mandate of the appellate court. *Id.* Trial courts are free to decide only those issues not resolved on appeal in the time the case remains open for further proceedings. *Id.* Prof. Wright and his colleagues conclude that the principle is so straightforward as to present few interesting problems. *Id.*

In Ninth Circuit law, issues on appeal can be disposed of either expressly or by clear implication. *Gough* v. *Rossmoor Corp.*, 533 F.2d 453, 454 (9th Cir.), *cert. denied*, 429 U.S. 857 (1976). Issues resolved by the judgment of the Court of Appeals may not be reopened for the admission of additional evidence unless that evidence is newly discovered within the meaning of Rule 60(b)(2). *Corex Corp.* v. *United States*, 638 F.2d 119 (9th Cir. 1981). "New evidence" under the rule must be evidence (1) that could not have been produced by due diligence during the trial or in time to move for a new trial under Rule 59(b), and (2) that is not merely cumulative. 11 C. Wright & A. Miller, *Federal Practice and Procedure* § 2859 (1973).

Not unaware that it might be faced with a requirement of "new evidence," Smith argues that under the facts of this case and the doctrine of *Hazel-Atlas Glass Co.* v. *Hartford-Empire Co.*, 322 U.S. 238 (1944), it need not produce "new evidence." The very manner in which the Supreme Court framed the question before it, however, indicates that Smith may not invoke the authority of *Hazel-Atlas* in support of its current motions.

> This case involves the power of a Circuit Court of Appeals, upon proof that fraud was perpetrated upon *it* by a successful litigant, to vacate its judgment . . . and direct vacation of a District Court's decree entered pursuant to the Circuit Court of Appeals' mandate.

322 U.S. at 239 (emphasis added). After so stating the issue, the Court determined that upon proof of fraud on the tribunal, the tribunal could freely exercise its ancient equitable powers to preserve "the integrity of the judicial process," *Id.* at 246, irrespective of the diligence of litigants, *id.* As indicated, Smith contends that Hughes committed fraud on the Patent Office. Certainly, it is "a very important policy consideration . . . to discourage all manner of dishonest conduct in dealing with the [Patent and Trademark Office]." *Rohm & Haas Co.* v. *Crystal Chemical Co.*, 722 F.2d 1556, 1571 (Fed. Cir. 1983). Indeed, the Supreme Court did not take lightly the fraud committed upon the Patent Office by the party in *Hazel-Atlas. See* 32 U.S. at 246. But the "odious fraud" of subverting the administration of justice, *id.* at 251 (Roberts, J., dissenting), is unique and alone calls for the extraordinary exercise of power described in *Hazel-Atlas. See* Fed. R. Civ. P. 60(b) ("This rule does not limit the power of a court . . . to set aside a judgment for fraud upon the court.") & 1946 Advisory Committee Note. *See also USM Corp.* v. *SPS Tech., Inc.*, 694 F.2d 505 (2d Cir. 1982), *cert. denied*, 103 S.Ct. 2455 (1983).

B. Fraud on the Patent Office

Having concluded that a prior determination of the issue now raised by Smith would require Smith to present "new evidence," the question becomes whether the issue was earlier determined. Smith explicitly raised the issue of fraud before the Ninth Circuit. Smith Reply Brief at 44-45 (Argument "H"). Proof of fraud on the Patent Office would have required a decision of invalidity. *E.g., Monolith Portland Midwest Co.* v. *Kaiser Alum. Chem. Co.*, 407 F.2d 288, 294 (9th Cir. 1969). Thus, the Ninth Circuit's decision that '928 is valid by clear implication decided the issue of fraud against Smith. Accordingly, this Court must now determine whether Smith has presented any

"new evidence" within the meaning of the law of the case doctrine. If there is no such new evidence, this Court is strictly bound by the mandate.

Smith presents four arguments based on what it views as four areas of new evidence. Each of the arguments is discussed in turn and evaluated in light of the evidence presented to Judge Firth by Smith many years ago. Each of the arguments is framed initially in Smith's own terms.

(1) "Hughes Withheld Evidence Indicating Belleville Seals Performed at Least as Well as O-Rings"

The '928 patent protects a "seal means" using an O-ring. In Hughes' drilling bits, '928 O-rings perform the critical function of preserving the lubricant on the bearing. Edward Galle, Hughes' employee who invented the O-ring seal means patented in '928, was at the time of his research seeking a substitute for the earlier art, including so-called Belleville seals. According to Smith, new evidence shows that Hughes withheld from the Patent Office data revealing that Belleville seals performed at least as well under test conditions as the new O-ring seals. Smith avers that Hughes gave the Patent Office an "apples and oranges" comparison of roller bearing bits with Belleville seals, on the one hand, and journal bearing bits with O-rings, on the other. Smith further avers that at the time of the prosecution of the '928 patent Hughes had in hand data showing that in head-to-head evaluations of Belleville and O-ring seals in bits with journal bearings, Belleville seals performed at least as well as O-rings. The "new evidence" consisted of data gathered by Hughes in tests PSR 1454, 1455, and 1456 in Project No. 42-63-015-2.

Is the evidence "new"? Before the Ninth Circuit, Smith contended that "substantial evidence" supported the contention that Hughes "compared a journal bearing bit with an O-ring and roller bearing bit with a Belleville seal," and that Hughes knew that the "improvement in bit life was in fact attributable to the

difference in bearing structures." Reply Brief at 44. According to Hughes' discovery records, Hughes delivered to Smith the records pertaining to PSRs 1454, 1455, and 1456 during preparation for the trial before Judge Firth. Smith's trial exhibit "E" included PSR 1456 records from Project No. 42-63-015-2. Thus, Smith's purportedly new evidence either was discovered in the 1970s or should have been discovered then by reasonable diligence. In the alternative, the purportedly new evidence is merely cumulative inasmuch as it simply supports the very argument that Smith advanced before the Ninth Circuit.

(2) "Any High Temperature Improvement Was Due to the Silver Inlay — Not the O-Ring"

Smith maintains that it only recently discovered critical information regarding the ability of the '928 O-ring to withstand drilling hole temperatures. This information, which Hughes allegedly withheld from the Patent Office, is that the Whanger silver inlay in the Hughes test bearings "acted as a solid lubricant and reduced frictional heat build up." Smith Memorandum at 33.

Smith must be charged with early knowledge of this information. Smith's trial exhibit "E", at E-6, included the following specification for the test bit journal bearings: "Change number of silver inlay grooves in cone journal from 20 to 28 and omit grease grooves." The fact that silver inlays in journal bearings contribute resistance to overheating and galling has been known at least since the time of Whanger Patent No. 3,235,316, granted February 15, 1966. The Whanger patent states explicitly that a composite journal bearing surface can increase resistance to heat. Similarly, the Whanger patent describes the anti-galling anti-friction properties of the silver or other soft metal to be used in a composite bearing of the type claimed in the patent.

(3) "Hughes Withheld the Fact That Experimental Bits With O-Rings Had Additional Features to Make Them Run Longer"

Smith contends that the Hughes test bits had many "non-standard" features that were not revealed to the Patent Office. Specifically, Smith states that test bits R-1107 and R-1108 had "non-standard" features that included (i) high chromium weld metals applied to the cones, (ii) machined silver alloy grooves in the cones, (iii) bearings packed in bushing compound; (iv) special carburizing of both head and cone; (v) silver alloy grooves filled with silver-manganese alloy; and (vi) hard metal facing on the thrust surface. Smith Memorandum at 42-43.

The short answer to all this is that Smith either knew or should have known long ago the structure of test bits R-1107 and R-1108. Smith's trial exhibit "Q" included the following description of these bits:

(a) Reduced length of silver groove in cone.

(b) Increased O-ring squeeze

(c) Used only silver in cone and only hard metal on head.

(d) Changed carburizing processing on cones.

Exhibit "Q," at Q-1. In addition, Smith possessed photographs of the constituent parts of R-1107. *Id.* at Q-5. Finally, the Whanger patent explicitly discusses the use of a silver-manganese alloy using 85 percent silver.

(4) "Hughes Disclosed Only the Bit Runs Which Supported Its Position and Withheld Others"

Bits R-1107 and R-1108 were run in Project No. 46-09-037-1. Smith claims that whereas the average footage drilled for R-1107 and R-1108 as reported to the Patent Office was 1,386.5 feet, the average for all bits in the project, including runs not reported, was 948 feet. There is nothing in all of this that Smith did not know or should not have known prior to the trial. Smith's trial exhibit "Q" gives footage figures for four bits, R-1107,

R-1108, R-1109, and R-1110, that yield an average footage of 1136.5 feet, which is certainly less than 1,386.5 feet by any standard usable in the drilling business. The reported footage of 485 feet for bit R-1109 put Smith on notice.

The Court's conclusion can be simply stated. Smith has no "new evidence." In the absence of "new evidence," this Court is bound by the mandates of the Ninth and Federal Circuits.

C. "Unclean Hands"

In a final contention, Smith argues that if the Court cannot examine the question of fraud, it can and should examine Hughes' "unclean hands" for the purpose of dissolving the preliminary injunction. It is Smith's position that the '928 patent may be valid but nonetheless unenforceable due to Hughes' conduct before the Patent Office.

As the date of the filing stamp on Smith's motion for partial summary judgment reveals, the points that Smith would now press upon the Court were known to Smith prior to the issuance of the preliminary injunction. The supposedly new evidence regarding Hughes' "inequitable" conduct was in Smith's hands. The principle of law that fraud on the Patent Office will render a patent invalid was well established. *E.g., Norton* v. *Curtiss,* 433 F.2d 779 (C.C.P.A. 1970). Moreover, as the prior analysis shows, the evidence was soon enough in Smith's possession, or should have been to have been raised in argument before the Federal Circuit. However, it appears that Smith chose to remain silent before the Circuit panel. *See* 718 F.2d at 1581 ("there do not appear to be any equitable considerations in this case that could *in any way* offset the strong showing . . . made by Hughes") (emphasis added). Before this Court Smith would apparently prevail by bringing motions for reconsideration under other names. At some point in this lawsuit the seemingly endless processing of legal argument to achieve a deadlock must stop — indeed Local Rule 7.16 requires that it be stopped. As Justice Story once observed, lawsuits should not be immortal

while men are mortal. *Ocean Ins. Co.* v. *Fields*, 18 F.Cas. 532, 539 (No. 10,406) (C.C.D. Mass. 1841) (Story, J., sitting as Circuit Judge). The preliminary injunction will remain in effect.

Hughes' request for sanctions is denied.

IT IS SO ORDERED.

IT IS FURTHER ORDERED that the Clerk shall serve, by United States mail, copies of this Order on counsel for the parties in this matter.

Dated: April 4, 1984.

/s/ MALCOLM M. LUCAS
MALCOLM M. LUCAS
United States District Judge

Transcript of Trial Held
on September 18-20, 1984

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Rule 60(b)?

MR. STADHEIM: Yes, Your Honor.

THE COURT: All right. I'm going to determine that part of the Hughes motion in limine which deals with what we have discussed so far as was disposed of by Judge Lucas and that is that the issue of fraud on the Patent Office as being one of the issues which was dedicated in the '77 trial is incorporated within the issues determined by the Court of Appeals; that is that the patent is valid. The only exception to that would be on the newly discovered evidence basis and I'm going to use the standard of Rule 60(b)2 to determine what newly discovered evidence is.

Now, this is going to lead then to two questions; first, whether I have got enough of a record here to determine whether this falls within newly discovered evidence or whether we need to take more evidence on that; and, secondly, whether generically, the question of enforceability of a patent comes within the same scope and let's now take ten minute recess first and then we'll punch into that.

Pages 81-83

I call Your Honor's attention once again to Doran versus Petroleum Management, 576 Federal 2d, 91, at 93, where the Court said, the Fifth Circuit: "The law-of-the-case doctrine, unlike claim preclusion, applies only to issues that were decided and does not include determination of all questions which were within the issues of the case and which, therefore, might have been decided."

I believe that is precisely our situation here insofar as the counterclaim situation is concerned. We point out to Your

Honor that Smith's answer to the counterclaim, the counterclaim being the counterclaim for patent infringement, asserted the unenforceability defense.

We would also point out that unenforceability defense was nowhere decided by Judge Firth for the obvious reason that having held the patent invalid, he didn't have to go on and do anything else.

Also point out that the pretrial order which preceded the 1977 trial limited that trial to issues of validity. All issues relating to the counterclaim were to be held for later.

Unenforceability is a defense. This would be directly analogous to a situation in which we, say, had a statute of limitations defense, that would be a defense to the counterclaim. Plainly that would not be in any way precluded by a holding of patent validity. That would simply [82] be a defense to the counterclaim. So it is with unenforceability. It was not part of the validity case that was tried. It's an unenforceability defense to the counterclaim.

THE COURT: All right.

Mr. Stadheim, do you have anything further you want to say?

MR. STADHEIM: I have a feeling, if you will give me one moment . . .

THE COURT: If not, I will stick my neck out and say what I think the law is.

(Pause.)

THE COURT: Anything further?

MR. STADHEIM: No, sir.

MR. GERIAK: No sir.

Transcript of Trial Held on September 18-20, 1984

THE COURT: I must say that I think that inequitable conduct, where it's based upon the same facts as alleged to be fraud on the Patent Office, is covered by the law-in-the-case doctrine. So that I'm going to rule out a separate defense for inequitable conduct on the theory that it's in effect been determined by the Ninth Circuit in their determination that the patent is valid.

Now, newly discovered evidence.

I do not agree, however, with Hughes that we apply a broader concept of issue preclusion.

Newly discovered evidence, again I'm convinced by [83] Judge Lucas' reasoning on this. It seems to me to be still open under the law-of-the-case doctrine.

Now, the question is what's newly discovered evidence. As far as I can tell from the motion papers, the only item alleged under this heading at this time is the material circumstances surrounding the Galle supplemental affidavit and particularly Smith's contention that what they found in the June, '84, depositions amounts to newly discovered evidence.

Now, the question is, first, what's the record on which I'm going to decide whether the evidence is newly discovered and, therefore, open to hear evidence on here in the trial.

Each of you have filed sizable documents — I got another one this morning from Smith which I haven't finished reading yet; it just came in this morning — on this problem.

(Pause.)

THE COURT: All right. What I've got was the motion in limine filed by Hughes on August 10, with Exhibits A through O attached to it.

Then there was a response filed by Smith about August 21. It's got Exhibits A through G attached.

Transcript of Tria! Held on September 18-20, 1984

Then there was the reply memorandum by Hughes filed August 29, which appears to be mainly a legal brief, no items attached.

Page 235-236

THE COURT: Let me suggest that that's really outside the inquiry here.

MR. DAVIS: It is, I agree, Your Honor.

THE COURT: And if the evidence is newly discovered, we will weigh out whether it is really a misrepresentation or not later. Or if it's a significant misrepresentation.

MR. DAVIS: I agree with you. I was merely adding it to respond to a comment that Mr. Geriak made. But that's all I have.

THE COURT: I must say, Gentlemen, — well, first, on the one-year point, I'm not going to hold to the one year on this. If you recall the case which imported the idea of newly discovered evidence in this, it was by analogy to apply the general purposes of Rule 60(b) rather than the typical motion to set aside a default for mistake, surprise, inadvertence, or excusable neglect or newly discovered evidence. But I don't think the evidence is newly discovered within the purpose of that rule. All the elements were there for inquiry back in '74. It just wasn't followed up on insofar as getting into the great detail that Smith has since gone into here. Therefore, I think that it's not — I find that it's not newly discovered evidence, and, therefore, I'm going to grant the motion in limine to exclude evidence of fraud on the Patent Office or inequitable conduct based upon the same factual contentions, which is what I understand it to be, from [236] the course of our proceeding.

Transcript of Trial Held on September 18-20, 1984

I guess I probably ought to do it by formal order. I believe you have submitted one. We will shortly take a recess and see if that needs editing and then sign it.

Mr. Geriak?

MR. GERIAK: Two things, Your Honor. I beg the Court's indulgence. If we are reasoning by analogy to Rule 60, there is one more segment of Rule 60 which should be brought to the Court's attention before we move to decision on Hughes' motion.

THE COURT: What's that?

MR. GERIAK: That is Subsection (6) of Rule 60(b), which says that in the interests of justice —

THE COURT: Any other reason? Any other reason language?

MR. GERIAK: Yes, sir.

THE COURT: Well, I don't think that's applicable here, frankly.

* * * *

Page 296-297

THE COURT: All right. I think the decision of the Ninth Circuit again as interpreted by the Federal Circuit is that this issue is foreclosed and what you have got doesn't amount to newly discovered evidence within the analogy of Rule 60 and the order I signed earlier today — I'll sign it again if you'd like — for better or for worse, for richer or poorer, right or wrong, that's the way I think about this.

MR. GERIAK: We are at the end of the road. I understand.

THE COURT: Let's plunge back into just what our issues are on the trial we are about to undergo.

**Transcript of Trial Held
on September 18-20, 1984**

MR. GERIAK: Well, at the risk of becoming unpopular with Your Honor, I hope to point out that there is now another issue which I believe requires serious attention and that is the issue of whether the trial should go forward in the condition in which the shape of the trial has now been designed. I submit to Your Honor that we run — well, first let me back up. The ruling that Your Honor has made is an appealable order. That may come as something of a surprise but —

THE COURT: It does.

MR. GERIAK: Well, let me explain. The United States Supreme Court in Gillespie versus United States in 1964, a case none of us habitually carry around in our [297] heads, I know, ruled that this is an appealable order; the reason being that it forecloses — it's in effect as Your Honor has already recognized a ruling on the merits.

In other words, there will be no appeal on whether fraud was committed in the — can be none in the juncture of the present case because there will have been no trial on whether fraud was committed.

THE COURT: Well, that's right.

MR. GERIAK: Yes.

* * * *

Page 304

* * * *

MR. GERIAK: I am suggesting to clean up loose ends might be desirable and invite a ruling on our pending motion to dissolve the injunction on the basis of the later-discovered fraud.

THE COURT: Okay. That's a good point. In fact, I was going to take that up with you gentlemen this afternoon, because

it occurred to me as I looked to this that my ruling on the law-of-the-case issue pretty well disposes of that motion to dissolve the preliminary injunction.

MR. GERIAK: I think it does, too.

THE COURT: And I was going to take up with counsel whether you are ready to have me rule on that.

MR. GERIAK: We are.

THE COURT: All right. The motion to dissolve the preliminary injunction is denied. That might be an appealable order, too.

MR. GERIAK: It is beyond any doubt.

THE COURT: Yes. Right.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT
717 Madison Place, N.W.
Washington, D.C. 20439

GEORGE E. HUTCHINSON
Clerk

TELEPHONE: 633-6550
AREA CODE 202

November 13, 1984

MR. NED L. CONLEY
Butler & Binion
1500 Allied Bank Plaza
Houston, Texas 77002

Re: *Smith International, Inc.*, etc. v. *Hughes Tool Company*, etc.
Appeal Nos. 84-1094 and 84-1767

Dear Mr. Conley:

The motion of the appellant to consolidate the above entitled appeals for the purposes of argument and decision, there being no objection by the appellee, has been granted.

Accordingly, this consolidated appeal will be argued before the same panel of judges when calendared for hearing. You will be notified approximately 4 weeks in advance of the hearing date.

Very truly yours,

/s/ GEORGE E. HUTCHINSON

cc: DAVID BRICE TOY, ESQ.

GEH:BAM

NOTE: This order will not be published in a printed volume because it does not add significantly to the body of law and is not of widespread legal interest. It is a public record. It is not citable as precedent.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

In Re SMITH INTERNATIONAL, INC., a Delaware corporation, *Petitioner.* Appeal No. 85-585

Before FRIEDMAN, RICH, and DAVIS, *Circuit Judges.*

ORDER

Smith International, Inc. (Smith), seeks a writ of prohibition pursuant to 28 U.S.C. § 1651(a) (1982) to stop the United States District Court for the Central District of California from continuing the trial of patent infringement suit which has been recessed to November 27, 1984. The order of the district court that Smith challenges precluded Smith from introducing evidence intended to show that those issues had been resolved against Smith in a prior decision of the Court of Appeals for the Ninth Circuit in this case. See below.

Smith contends that its filing of a notice of appeal from that order divested the district court of jurisdiction to continue the trial and even to decide whether the filing of the notice had that effect, and that a writ of prohibition should issue to prevent the district court from acting without jurisdiction. We deny the writ.

I

In 1972, Smith brought a declaratory judgment action seeking a determination that Patent No. 3,397,928 owned by Hughes Tool Company (Hughes), was invalid. Hughes counterclaimed, alleging infringement (which Smith admitted) and seeking injunctive and monetary relief. In earlier phases of this protracted litigation, the Ninth Circuit held the patent valid and enforceable, *Smith International, Inc.* v. *Hughes Tool Co.*, 664

F.2d 1373 (9th Cir.), *cert. denied*, 456 U.S. 976 (1982), and this court ordered the district court to enjoin Smith from infringing claim 1 of the patent. 718 F.2d 1573 (Fed. Cir.), *cert. denied*, ... U.S. ...., 104 S.Ct. 493 (1983).

In February 1984, Hughes moved to hold Smith in contempt for violating the injunction by making and selling a new device that allegedly infringed the patent. Prior thereto Hughes had amended its counterclaim to allege that the new device also infringed its patent. The district court combined the contempt and infringement proceedings.

Trial commenced on September 18, 1984. In the first week of trial the district court ruled that it would not receive evidence regarding the already adjudicated issues of patent invalidity, fraud on the patent office, and unenforceability. On September 19, 1984, Smith filed a notice of appeal to this court from that ruling, Appeal No. 84-1767.

The trial of the contempt issue proceeded for five weeks. On October 16, the district court dismissed the contempt charge and on the following day ruled that the trial of the infringement issue would go forward, and recessed the case to November 27, 1984. Smith filed its application for a writ of prohibition on October 18, 1984.

II

The sole ground upon which Smith seeks a writ of prohibition is to prevent the district court from completing the pending trial of a case in which it allegedly lost jurisdiction. Smith contends that the court lost jurisdiction as a result of Smith's filing of a notice of appeal from the district court's order barring Smith from presenting evidence relating to the alleged invalidity of the patent. As noted, Smith has pending before us an appeal from that order. Smith contends that the order is appealable, but even if it is not, the filing of the notice of appeal ousted the district court of jurisdiction to proceed with the trial of the case.

The appealability of the order is an issue this court presumably will resolve in the pending appeal from the order. The overwhelming weight of judicial authority is that the filing of a notice of appeal from a nonappealable order does not divest the district court of jurisdiction. *See Cochran* v. *Berkel*, 651 F.2d 1219 (6th Cir. 1981), *cert. denied*, 454 U.S. 1152 (1981); *United States* v. *Leppo*, 634 F.2d 101 (3d Cir. 1980); *Leonhard* v. *United States*, 633 F.2d 599 (2d Cir.), *cert. denied*, 451 U.S. 908 (1980); *United States* v. *Hitchmon*, 602 F.2d 689 (5th Cir. 1979); *Arthur Andersen & Co.* v. *Finesilver*, 546 F.2d 338 (10th Cir. 1976), *cert. denied*, 429 U.S. 1096 (1977); *Hodgson* v. *Mahoney*, 460 F.2d 326 (1st Cir.), *cert. denied*, 409 U.S. 1039 (1972); *Ruby* v. *Secretary of United States Navy*, 365 F.2d 385 (9th Cir. 1966) (en banc), *cert. denied*, 386 U.S. 1011 (1967); *see also Keith* v. *Newcourt, Inc.*, 530 F.2d 826 (8th Cir. 1976). Cf. *Williams* v. *Bernhardt Bros. Tugboat Service, Inc.*, 357 F.2d 883 (7th Cir. 1966).

The circuits that have so ruled include the Ninth, in which this case is being tried, and the Fifth, the panel decision of which in *United States* v. *Hitchmon*, 587 F.2d 1357 (5th Cir. 1979), was heavily relied upon by Smith in its opening brief but which, as Hughes pointed out in its opposing brief, the Fifth Circuit overturned in its en banc rehearing decision in the case reported at 602 F.2d 689.

An extraordinary writ will not be issued unless the moving party unequivocally establishes its right to relief. In view of the considerations noted above, Smith has not come even close to doing so. The issuance of an extraordinary writ would be particularly inappropriate here, when the writ is sought to prevent the district court from completing an ongoing jury trial.

Smith will have full opportunity to test the validity of the district court's order in any appeal from that court's final judgment. "[A] writ of prohibition may not be invoked as a substitute for appeal and will generally not lie where there is a remedy

by appeal even in cases where such an appeal may involve inconvenience, delay or expenses to the applicant." *In Re State of Missouri*, 664 F.2d 178, 180 (8th Cir. 1981).

The petition for a writ of prohibition is denied.

FOR THE COURT

/s/ DANIEL M. FRIEDMAN
DANIEL M. FRIEDMAN
Circuit Judge

11/21/'84
Date

35 U.S.C. § 102

§ 102. Conditions for patentability; novelty and loss of right to patent.

A person shall be entitled to a patent unless —

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention

there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce the practice, from a time prior to conception by the other.

35 U.S.C. § 103

§ 103. Conditions for patentability; non-obvious subject matter.

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made. Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

35 U.S.C. § 112

§ 112. Specification.

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.

An element in a claim for a combination may be expressed as a means or step for performing a specific function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 282

§ 282. Presumption of validity; defenses.

A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:

(1) Noninfringement, absence of liability for infringement or unenforceability,

(2) Invalidity of the patent or any claim in suit on any ground specified in part II of this title as a condition for patentability,

(3) Invalidity of the patent or any claim in suit for failure to comply with any requirement of sections 112 or 251 of this title,

(4) Any other fact or act made a defense by this title.

In actions involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or, except in actions in the United States Claims Court, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires.

Invalidity of the extension of a patent term or any portion thereof under section156 of this title because of the material failure —

(1) by the applicant for the extension, or

(2) by the Commissioner,

to comply with the requirements of such section shall be a defense in any action involving the infringement of a patent during the period of the extension of its term and shall be pleaded. A due diligence determination under section 156(d)(2) is not subject to review in such an action.

Federal Rules of Civil Procedure, Rule 60

Rule 60. Relief from Judgment or Order.

(a) *Clerical Mistakes.* Clerical mistakes in judgments, orders or other parts of the record and errors therein arising from oversight or omission may be corrected by the court at any time of its own initiative or on the motion of any party and after such notice, if any, as the court orders. During the pendency of an appeal, such mistakes may be so corrected before the appeal is docketed in the appellate court, and thereafter while the appeal is pending may be so corrected with leave of the appellate court.

(b) *Mistakes; Inadvertence; Excusable Neglect; Newly Discovered Evidence; Fraud, etc.* On motion and upon such terms as are just, the court may relieve a party or his legal representative from a final judgment, order, or proceeding for the following reasons: (1) mistake, inadvertence, surprise, or excusable neglect; (2) newly discovered evidence which by due diligence could not have been discovered in time to move for a new trial under Rule 59(b); (3) fraud (whether heretofore denominated intrinsic or extrinsic), misrepresentation, or other misconduct of an adverse party; (4)the judgment is void; (5) the judgment has been satisfied, released, or discharged, or a prior judgment upon which it is based has been reversed or otherwise vacated, or it is no longer equitable that the judgment should have prospective application; or (6) any other reason justifying relief from the operation of the judgment. The motion shall be made within a reasonable time, and for reasons (1), (2), and (3) not more than one year after the judgment, order, or proceeding was entered or taken. A motion under this subdivision (b) does not affect the finality of a judgment or suspend its operation. This rule does not limit the power of a court to entertain an independent action to relieve a party from a judgment, order, or proceeding, or to grant relief to a defendant not actually personally notified as provided in Title 28, U.S.C., § 1655, or to set aside a judgement

for fraud upon the court. Writs of coram nobis, coram vobis, audita querela, and bills of review and bills in the nature of a bill of review, are abolished, and the procedure for obtaining any relief from a judgment shall be by motion as prescribed in these rules or by an independent action.

84-1995

Office - Supreme Court, U.S.
FILED
JUN 24 1985

No. 85-.....

Office - Supreme Court, U.S.
FILED
JUN 24 1985
ALEXANDER L. STEVAS
CLERK

IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

SMITH INTERNATIONAL, INC.,

Petitioner,

v.

HUGHES TOOL COMPANY,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

SUPPLEMENTAL APPENDIX ON BEHALF OF PETITIONER

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Aug. 20, 1968 E. M. GALLE 3,397,928

SEAL MEANS FOR DRILL BIT BEARINGS

Filed Nov. 8, 1965 2 Sheets-Sheet 1

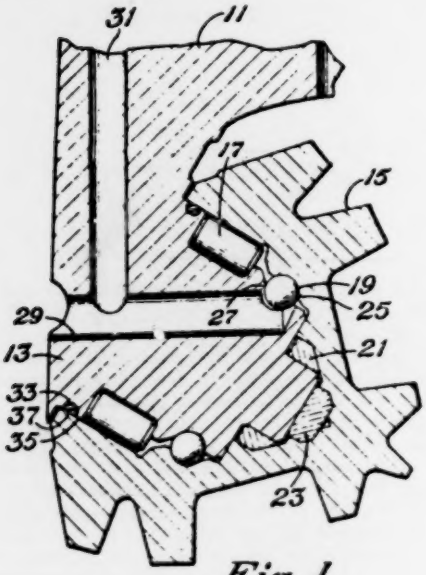

Fig. 1

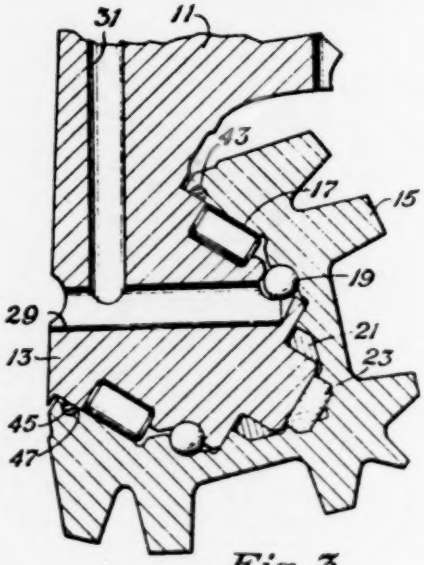

Fig. 3

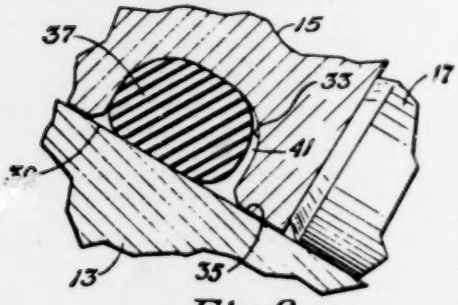

Fig. 2

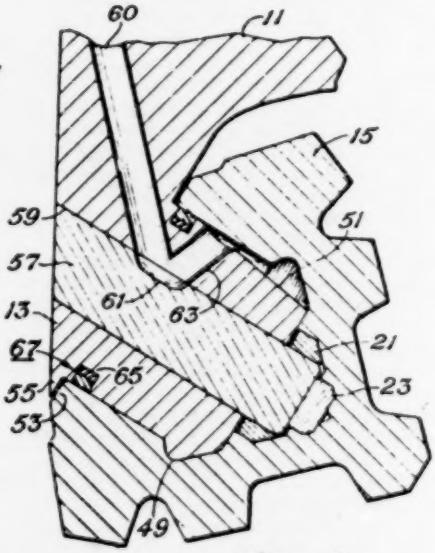

Fig. 4

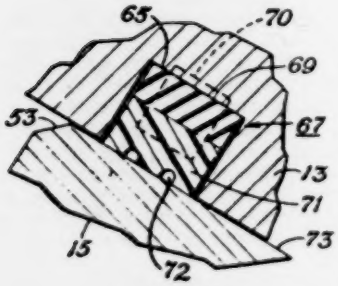

Fig. 5

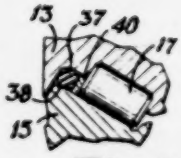

Fig. 3-A

INVENTOR
Edward M Galle
BY
Wofford & Felsman
ATTORNEYS

Aug. 20, 1968 E. M. GALLE 3,397,928

SEAL MEANS FOR DRILL BIT BEARINGS

Filed Nov. 8, 1965 2 Sheets-Sheet 2

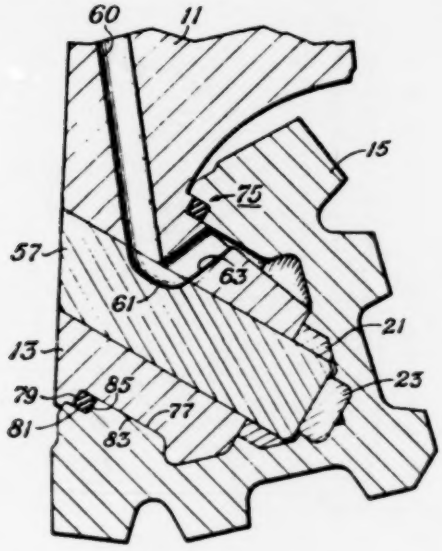

Fig. 6

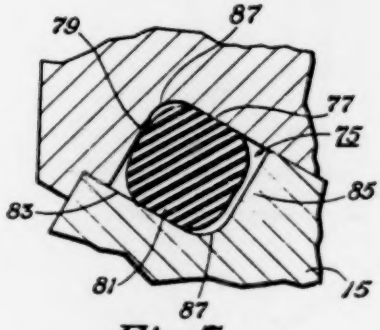

Fig. 7

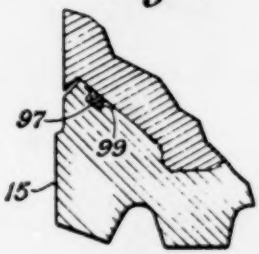

Fig. 9

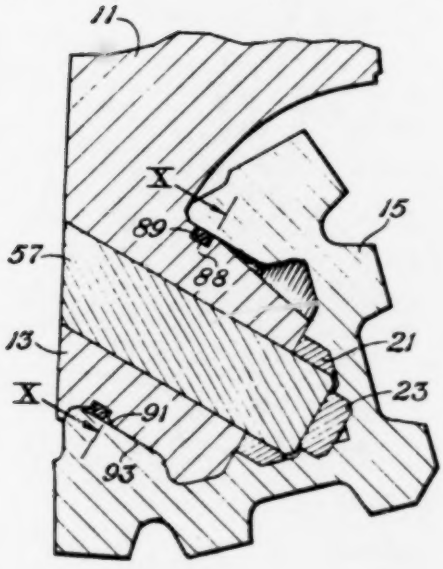

Fig. 8

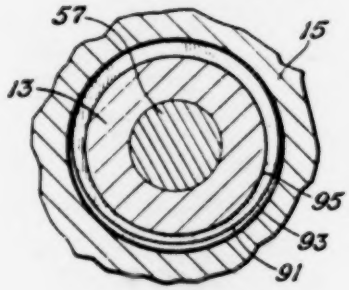

Fig. 10

INVENTOR
Edward M. Galle
BY
Wofford & Coleman
ATTORNEYS

United States Patent Office 3,397,928
Patented Aug. 20, 1968

1

3,397,928

SEAL MEANS FOR DRILL BIT BEARINGS

Edward M. Galle, 814 Elton,
Houston, Tex. 77034

Filed Nov. 8, 1965, Ser. No. 506,654
11 Claims. (Cl. 308—8.2)

My invention relates in general to improved seal means for drill bit bearings and in particular to seal means of the packing ring type.

Previously, efforts have been made to develop satisfactory seal means capable of effectively retaining a lubricant inside the rotatable cutters or cones and around the bearing surfaces of drill bits used in earth boring operations. Past efforts have been successful to the extent that drill bits which include effective seal means are now commercially available. The most effective prior art seal for drill bit bearings was patented by Atkinson et al., U.S. Patent No. 3,075,781. For reasons that will become apparent hereinafter, there exits the need for additional or improved forms of seal means for drill bit bearings.

One problem encountered when trying to originate satisfactory seal means for drill bit bearings arises due to the nature and extent of cone movement relative to the bearing shaft or pin. Cone movement is complex and includes rapid axial and radial as well as wobbling motions. Such motions generate pressure variations in the lubricant that are sensed by the seal means. Moreover, these sensed pressure variations often result in lubricant loss.

Resilient packing ring type seals, of which the "O-ring" is one popular form, are known to usually have the ability to seal effectively in the presence of pressure variations. Such seals are only recommended for use, however, where the bearings surfaces are free of sand, grit or other foreign particles, and where movements such as wobbling between the parts to be sealed is relatively small. Previous attempts to use packing ring type seals in lubricated drill bits have produced something less than satisfactory results.

In addition, small cross sectional compressions or interferences are recommended for resilient packing ring seals of the O-ring type used in rotary applications, since large interferences generate high temperatures due to increased friction. Unfortunately, small interferences for resilient packing ring type seals are not generally effective in drill bit bearings due to the large cone movements, and to the large amounts of wear that frequently result from the large forces applied to drill bit bearings. Consequently, conventional resilient packing ring seals, if applied to drill bit bearings in the conventional manner, are not satisfactory.

Preferably, the seal means for lubricated drill bit bearings should have the ability to withstand substantial pressure variations; the ability to seal effectively for long periods of time in the presence of sand or other foreign particles; and the ability to seal effectively in the face of excessive cone movement and wear.

It is accordingly the general object of my invention to provide improved seal means for drill bit bearings.

Another object of my invention is to provide resilient packing ring type seals that are effective even when sand or other foreign particles are present and in the presence of large cone movements and wear.

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Another object of my invention is to increase the effectiveness of resilient packing ring type seals in drill bit bearings by altering the configuration of the bearing surfaces in the vicinity of the packing ring grooves.

These and other objects are effected by my invention as will be apparent from the following description, taken in accordance with the accompanying drawings in which:

FIG. 1 is a fragmentary side elevational view in section of a drill bit bearing shaft or pin, the associated rotatable cutter element or cone, and a packing ring assembled therewith in accordance with the principles of my invention;

FIG. 2 is an enlarged fragmentary side elevational view in section of portions of the FIG. 1 apparatus. The purpose in providing this view is to illustrate in enlarged detail a preferred embodiment of my packing ring and the associated groove structure;

FIG. 3 is a fragmentary side elevational view in section of a modified form of my invention;

FIG. 3–A is a form of my invention similar to the FIG. 1 embodiment.

FIG. 4 is another fragmentary side elevational view in section of a third form of my invention;

FIG. 5 is an enlarged fragmentary side elevational view in section which shows in greater detail the packing ring construction of FIG. 4;

FIG. 6 is another fragmentary side elevational view in section which shows another form of my invention;

FIG. 7 is an enlarged and fragmentary side elevational view in section showing the packing ring and groove configuration of the FIG. 6 apparatus;

FIG. 8 is a fragmentary side elevational view in section of still another form of my invention;

FIG. 9 is an enlarged fragmentary side elevational view in section of seal means that relates to the FIG. 8 apparatus, but which is modified therefrom; and

FIG. 10 is a cross sectional view as seen looking along the lines X—X of FIG. 8.

Referring now to FIG. 1, the numeral 11 designates the lower region of a drill bit body. A relatively stationary bearing shaft 13 is integrally secured thereto. Rotatably secured to the bearing pin 13 is a cutter element or cone 15. In this instance bearing pin 13 and the interior of cone 15 mutually engage a row of rollers 17, a row of balls 19, a bushing 21, and a thrust button 23, all of which cooperatively serve as bearing elements to support the large loads normally applied to the drill bit.

Cone 15 is retained to bearing pin 13 by means of balls 19 that are confined within the cone and bearing pin ball raceways 25, 27. During assembly of cone 15 with bearing pin 13, balls 19 are introduced to raceways 25, 27 through a ball passageway 29, which subsequently receives a plug (not shown) to retain the balls 19 in the raceways. This particular drill bit has a passage 31 that communicates at its upper end with a lubricant reservoir (not shown) and with the ball passageway 29. The plug (not shown) that is inserted in the ball passageway 29 has a configuration such that lubricant is free to flow thereby and thus to the balls 19. Clearances are provided between bearing pin 13 and the interior of cone 15 so that lubricant is distributed to the above described bearing elements. A suitable grease feeding device (not shown) is included in the drill bit so that lubricant is urged through passage 31, through ball passageway 29, and thus to the bearing

elements. This grease feeding device should be of the type which substantially equalizes the pressure of the lubricant and the drilling fluid. The portions of the FIG. 1 apparatus described thus far are conventional and well known; my invention is not limited to any particular form thereof.

In the FIG. 1 drill bit, a circumferential groove 33 is formed in a cylindrical surface 35 on bearing pin 13 rearwardly of rollers 17. As may be seen in FIGS. 1 and 2, a resilient packing ring 37 is inserted in groove 33 and confined thereby such that it engages the opposing cylindrical surface 39 inside cone 15. The width of groove 33 is preferably larger than the width of packing ring 37 when compressed such that there is a slight clearance 41 left at one side of the packing ring. The packing ring 37, the bearing pin and its components, the groove 33, and the opposing surface 39 of the cone are sized such that the cross sectional thickness of the ring is compressed to not less than substantially ten percent of its cross sectional thickness when in the relaxed condition. Preferably, the compression of the cross sectional thickness of the ring is not less than substantially fifteen percent of the cross sectional thickness of the ring when in the relaxed condition. The fifteen percent interference value is more practical in anti-friction drill bit bearings of the type shown in FIGURE 1 due to the normal variation in dimensions of the bearing components and due to the normal amount of wear in such bearings during the life span of the bit. For example, if the packing ring is an O-ring having a cross sectional thickness when relaxed of .139 inch, then the amount of compression of the cross section (usually referred to as the amount of "interference") of the O-ring should be not less than substantially .014 and preferably not less than substantially .021. If the ring has, however, a cross sectional thickness of .210 inch, then it should be compressed to a value not less than substantially .021 and preferably not less than substantially .032. I prefer also that the packing rings be compressed to values not greater than about twenty percent of the relaxed cross sectional thickness, since extremely high interferences can be detrimental to the seal means.

The packing ring compressions or interferences disclosed above are significantly in excess of those recommended for rotary applications by manufacturers of packing rings of the O-ring type. Large interferences tend to increase friction and overheat packing rings, thus decreasing their life span. I have discovered, however, that such interferences may be successfully used in drill bits for reasons that will become apparent hereinafter.

Apparently, the heat generated by the above disclosed large interferences dissipates in the drilling fluid that turbulently flows around the drill bit. In addition to the surrounded drilling fluid cooling the seal directly, the drill bit construction in the area of the seal and the surrounding drilling fluid cooperate to form a heat sink or heat exchanger, which constantly cools the metal around the seals. This significantly increases the life of the seals or packing rings and permits the use of higher than ordinary rotary interferences.

Large interferences tend to increase the wear of packing rings and their mating surfaces, a phenomenon that is augmented by the presence of abrasives, such as sand, that are normally suspended in drilling fluids. If, however, the O-rings are manufactured of a resilient material, such as rubber, having a durometer hardness of not over substantially seventy (Shore A), the life span of the packing rings can be significantly increased. Preferably, the durometer hardness of the packing rings is selected from a range that varies from substantially fifty through seventy. In the past it has been recommended that higher durometer hardnesses than these be utilized in packing rings used for rotary applications. However, if softer resilient materials are used in the presence of abrasive particles, the packing rings can apparently accommodate, or form around, the individual abrasive particles and increase the life span of the packing rings and surrounding surfaces.

Thus, the utilization of the interferences disclosed above, especially when coupled with the utilization of the above durometer hardnesses produces a most effective seal means for use in drill bit bearings. Such interferences produce effective seals even after extensive wear has occurred in the bearing surfaces. By increasing the amount of interference between the packing ring and the surfaces it engages, more bearing wear can occur without rendering the seal means ineffective. In addition, increased axial and radial cone movements, as well as wobbling, can occur without the loss of seal effectiveness.

An example of manufacturing data for seal means of the type shown in FIGS. 1 and 2 that performed satisfactorily during actual well drilling operations is as follows:

A resilient packing ring constructed of butadiene acrylonitrile (Buna N) rubber with an inside diameter of 2.234±.010 inches, a mean outside diameter of 2.512 inches, and a nominal relaxed cross sectional thickness of .139±.004 inch was inserted in a circumferential rectangular groove. The packing ring was of the O-ring type, being circular in cross section. The base of the groove had a diameter of 2.468±.002 inches and had radii in the corners of .062+0, −.010 inch. The groove width was .152±.002 inch. The upper edges of the groove had slight bevels to eliminate the sharp corners. The diameter of the cylindrical surface 35 of the bearing pin was 2.660+0, −.004 inches and the inside diameter of the opposed cylindrical surface 39 of the cone was 2.690+.004, −0 inches. The diameter of the inner roller raceway of the bearing pin was 1.812+0, −.004 inches and the diameter of the rollers was .4375+.001, −0 inch. The outside diameter of the O-ring assemblied in its groove prior to assembly with a cone was measured on a number of bearing shafts. The average value of these measured diameters was 2.733 inches, which produced an O-ring compression on the pressure side of the bearing of about .023, or 16.5 percent of the O-ring thickness when in the relaxed unassembled condition (i.e. having .139 inch cross sectional diameter). The durometer hardness of the ring was 70 Shore A. Such a ring performed satisfactorily over the entire lifespan of the drill bit, being particularly effective in retaining lubricant and excluding abrasives.

With the above dimensions the O-ring is stretched when assembled in the groove such that its cross sectional diameter is reduced to about .133 inch. Although the above dimensions produced satisfactory results, I prefer that the O-ring is not stretched so greatly when assembled so that it maintains approximately the original relaxed .139 inch cross sectional thickness. Therefore, the above dimensions should be adjusted so that the packing ring is only slightly stretched and thus produces a packing ring cross sectional diameter of approximately .139 inch. Most rubber when heated in a stretched condition tends to contract, which may detrimentally effect the packing ring during operation due to increased tensile stresses. Thus, I prefer not to stretch the O-ring so greatly during assembly.

FIG. 3–A illustrates a variation of the FIG. 1 embodiment wherein O-ing 37 is inserted in a substantially L-shaped groove 38 which has a floating flange or ring 40 that separates the O-ring from the rollers. This would enable the use of a larger cross sectional diameter O-ring or enable the use of longer rollers since a thin (as measured axially) flange 40 may be used without danger of breakage. A stationary flange as shown in FIG. 1 may fragment during drilling operations if made very thin.

In FIG. 3 is illustrated a modified form of my invention that is closely related to the form illustrated in FIG. 1. The lower region 11 of the drill bit body, bearing pin 13, cone 15, rollers 17, balls 19, bushing 21, and thrust bearing 23 are all similar to those of FIG. 1. The only difference in these two forms of my invention is that the

packing ring 43 of FIG. 3 is nested in a circumferential groove 45 that is formed in the cylindrical surface 47 inside the cone, instead of being assembled in a groove inside bearing pin 13. In this instance, an interference and durometer hardness are selected as disclosed above.

The packing rings can have a variety of geometries and are not limited to those that are circular in cross section. The rings may be, for example, oval shaped, somewhat squared (often referred to as quad-rings), or may have the form illustrated in FIGS. 4 and 5. FIG. 4 shows a drill bit body 11 having a bearing pin 13 formed thereon for rotatably supporting a cone 15. Bearing pin 13 has an annular lip 49 with a flattened upper region 51. The cone 15, including thrust button 23 and bushing 21, is assembled on bearing pin 13. Then a retainer pin 57 is inserted in an aperture 59, which is formed coaxially with the longitudinal axis of the bearing pin. Hence the cone 15 is locked in position on the bearing pin 13. Once again, there are a series of passages 60, 61, 63 which interconnect a lubricant reservoir (not shown) with the various bearing surfaces.

A packing ring groove 65 is formed circumferentially around bearing pin 13 adjacent shirttail 55. A packing ring 67 is inserted into the groove 65. The particular form of packing ring shown in FIGS. 4 and 5 has an inner portion 69 formed of such material as rubber, and an outer portion 71 formed of tetrafluoroethylene resin. When inner portion 69 and outer portion 71 are mounted in groove 65 prior to assembly of the cone 15 and bearing pin 13, the radial thickness of inner portion 69 is compressed and outer portion 71 assumes a larger diameter such that their composite radial thickness is substantially greater than the depth of groove 65. Portions 69, 71 of the packing ring, groove 65, and the engaging surface 73 of the cone are sized such that the thickness of composite ring 67 is compressed upon assembly of the cone 15 upon the bearing pin 13 by at least substantially ten percent of the radial thickness of the composite ring prior to such assembly. Preferably the composite ring is compressed by at least substantially fifteen percent or greater. FIG. 5 shows the inner portion 69 in its condition when the cone is assembled with the bearing pin and also shows in phantom, numeral 70, its relaxed condition.

The outer surface of outer portion 71 of the composite packing ring 67 preferably has one or more circumferential grooves 72 to impede the flow of lubricant that may tend to flow from inside the bearing past the seal in this vicinity. It is preferable that inner and outer portions 69, 71 of the packing ring not be bonded together so that inner portion 69 can expand laterally in an unrestricted manner when compressed within groove 65.

Tetrafluoroethylene resin was selected for the construction of outer portion 71 because of its low coefficient of friction when engaged with steel. It is preferred that the outer diameter of outer portion 71 in its relaxed condition be approximately the same as that of the engaging cylindrical surface 73. The thickness of outer portion 71 does not change appreciably when assembled.

An example of manufacturing data of successfully used seal means of the type shown in FIGS. 4 and 5 are as follows:

The groove 65 was formed in a bearing pin cylindrical surface having a diameter of 2.250+0, −.002 inches. The groove was .200+.002, −0 inch wide and .178+.001, −0 inch deep. The inner portion 69 of the packing ring was formed of butadiene acrylonitrile rubber (Buna N), having a 1.859±.010 inch inner diameter, a 2.127 inch outer diameter, a thickness of .134±.004 inch and a width of .134±.004 inch in the relaxed condition, being rectangular in cross section as shown in FIG. 5. The outer portion 71 of the packing ring was formed of tetrafluoroethylene resin, having an inner diameter in the relaxed condition of 2.095+.002, −0 inches, and an outer diameter of 2.255+.002, −0 inches, a width of .195+0, −002 inch and a thickness of .080 inch. The inside diameter of the mating surface of the cone was 2.255+.002, −0 inches. Upon assembly of the cone on the bearing shaft the composite packing ring was compressed by approximately seventeen percent from its composite cross sectional thickness when assembled in the groove prior to cone assembly.

There are a number of groove configurations which may be satisfactorily used so long as the packing ring receives cross sectional compression in accordance with the above principles. Referring now to FIGS. 6 and 7, the drill bit body 11 once again has a bearing pin 13 formed thereon to support a rotatable cone 15. The cone has inserted therein a bushing 21 and a thrust button 23 and is secured to the bearing pin by a retainer pin 57. Passages 60, 61 and 63 are provided so that lubricant can flow from a reservoir (not shown) to the various surfaces of the bearing. This drill bit and its bearings as thus far described are substantially identical with the drill bit shown in FIG. 4.

The groove means 75 shown in FIGS. 6 and 7 is different in configuration from those previously shown. From the cylindrical surface 77 on bearing pin 13 extends a radial surface 79, which is formed such that a packing ring 81 may be nested thereagainst. Cone 15 has a cylindrical surface 83 that is preferably parallel with the cylindrical surface 77 of bearing pin 13. Also, the cone has a substantially radially extending surface 85 which is preferably parallel with the radially extending surface 79 of the bearing pin. Radii 87 are formed in the corners of the grooves and the dimensins of the bearing pin and cone are selected such that the axially measured width of the groove is slightly greater than the compressed width of the packing ring 81. Successfully used packing rings of circular cross section were made of butadiene acrylonitrile (Buna N) rubber and were compressed from an original cross sectional thickness of .210±.005 inch to a cross sectional thickness of about .184 inch. Also, the durometer hardness of the ring was 70. Thus, it should be apparent that the principles of my invention may be applied to many types of grooves and that my invention is not limited to any particular type groove. For example, the packing ring of FIGS. 6 and 7 may be compressed axially instead of radially with only slight groove modification.

FIGS. 8 and 10 illustrate a modification of my invention which is advantageous. The drill bit cones and bearings are similar to those shown in FIGS. 4 and 5, including a body 11 having a bearing pin 13 formed thereon that supports a rotatable cone 15. The cone has a bushing 21 and a thrust button 53 and is secured to the bearing pin by a retainer pin 57. The bearing pin in this instance has a circumferential groove 88 formed therein which contains a packing ring 89. The packing ring and its groove are constructed in accordance with the principles explained in connection with FIGS. 1 and 2. That is, the packing ring has interference and durometer hardness in accordance with the above principles.

In this instance, however, a clearance groove 91 is formed on the pressure side of the bearing to overlie the packing ring groove (the clearance groove has a greater width than does the packing ring groove) to provide a region around the packing ring where there is no metal-to-metal contact. The construction of a preferred form of this groove may be seen in the cross sectional view of FIG. 1—where the clearance groove 91 is shown eccentrically formed with respect to bearing surface 93 of the bearing pin and with the bottom of packing ring groove 95. The purpose of this clearance groove is to reduce the heat around the seal on the pressure side of the bearing and also to remove the sharp metal corners that tend to form as the surface 93 of the bearing pin begins to wear.

FIG. 9 illustrates an alternate form of my clearance groove wherein the packing ring groove 97 is formed in cone 15 and the clearance groove 99 is also formed in the cone to overlie the packing ring groove. In this instance, as in the FIGS. 8 and 10 form of my invention, the advantages are that the heat is reduced in the region around the

packing ring, since there is no metal-to-metal contact closely adjacent the packing ring. Also, the tendency for sharp metal corners to form after the bearing begins to wear is significantly decreased. The cross sectional thicknesses of the above packing rings should not be less than one and one-half percent of the drill bit diameter in which they are assembled and preferably not less than about two and one-half percent thereof. If the ring is too small, it will not have the ability to expand sufficiently to compensate for wear, tolerances and clearances.

With the above described types of packing rings a lubricant should be used which does not thicken appreciably during the life span of the drill bit.

It should be apparent from the foregoing that I have provided an invention having significant advantages. Packing ring type seal means having the above described interferences have been found effective in retaining lubricant inside drill bit bearings while excluding foreign particles such as abrasives. This is particularly true when durometer hardnesses are selected as explained above and utilized in packing rings having interferences as explained above. Such high interferences could be expected to generate heat in amounts sufficient to soon damage the packing rings. Apparently, however, the configuration of drill bits and the large volume of drilling fluid flowing therearound cooperate to form a good heat exchanger or heat sink, as mentioned previously. The temperature of the packing rings remains relatively low, enabling the packing rings to operate effectively over the life span of the drill bit.

Moreover, the durometer hardnesses specified above increase the life span and effectiveness of the packing rings. By using the hardnesses specified above, the packing rings apparently have the ability to form around the abrasive particles instead of tearing or abrading the rings. Thus, the life span of the packing rings is increased when compared to the life span of packing rings having higher hardnesses.

The use of the clearance grooves shown in FIGS. 8, 9 and 10 further increases the life span of packing rings used in drill bits. By removing the additional metal in the region of each packing ring, the heat is reduced around the packing ring on the pressure side of the bearing. In addition, the sharp metal corners which tend to form after the drill bit has been run for a period of time under the commonly used large loads are kept away from the packing rings.

While I have shown my invention in only a few of its forms, it should be apparent to those skilled in the art that it is not so limited, but is susceptible of various modifications and changes without departing from the spirit thereof.

I claim:

1. Seal means for drill bit bearings, said seal means comprising: a shaft rigidly secured to a drill bit body and having a bearing surface formed thereon; a cutter element rotatably mounted to said shaft and having a bearing surface thereon that opposes and engages the bearing surface on said shaft, one of said surfaces having a circumferential groove therein; and a resilient packing ring positioned within said groove, with said packing ring, said groove and an opposing surface being sized such that upon assembly of the cutter element upon the shaft the cross sectional thickness of said ring is compressed by not less than substantially ten percent of its thickness prior to assembly of the cutter element upon the shaft.

2. The invention as defined by claim 1 wherein said packing ring has a durometer hardness of not over substantially seventy.

3. Seal means for drill bit bearings, said seal means comprising: a shaft rigidly secured to a drill bit body and having a bearing surface formed thereon; a cutter element rotatably mounted to said shaft and having a bearing surface thereon that opposes and engages the bearing surface on said shaft, one of said surfaces having a circumferential groove therein; and a resilient packing ring positioned within said groove, with said packing ring, said groove and an opposing surface being sized such that upon assembly of the cutter element upon the shaft the cross sectional thickness of said ring is compressed by not less than substantially fifteen percent of its thickness prior to assembly of the cutter element upon the shaft.

4. The invention as defined by claim 3 wherein said packing ring has a durometer hardness of not over substantially seventy.

5. Seal means for drill bit bearings, said seal means comprising: a shaft rigidly secured to a drill bit body and having a bearing surface formed thereon; a cutter element rotatably mounted to said shaft and having a bearing surface thereon that engages the bearing surface on said shaft, one of said bearing surfaces having a circumferential packing ring groove therein; a resilient packing ring positioned within said packing ring groove; one of said surfaces having a circumferential clearance groove that has a greater width than and which overlies the packing ring groove to provide an annular region around said packing ring groove where there is no metal-to-metal contact; said packing ring having its cross sectional thickness compressed by not less than substantially ten percent of its thickness when in the relaxed condition.

6. The invention as defined by claim 5 wherein each drill bit bearing has the conventional pressure and nonpressure areas and wherein said circumferential clearance groove is formed primarily in the vicinity of the pressure area of the bearing surface of said shaft.

7. In a drill bit of the rolling cutter type having seal means to retain lubricant in the bearing area between each cutter and its supporting shaft, said bit comprising:

a lubricant reservoir connected with the bearing area between each cutter and its shaft, said reservoir being of the pressure compensating type to substantially equalize the average pressure of the lubricant and the drilling fluid;

a selected one of the cutters and the supporting shaft having groove means to receive said seal means;

said seal means being of the packing ring type and being compressed by not less than ten percent of its thickness prior to assembly between the cutter and the supporting shaft.

8. The apparatus defined in claim 7 wherein the said packing ring is an O-ring.

9. Seal means for drill bit bearings, said seal means comprising: a shaft rigidly secured to a drill bit body and having a bearing surface formed thereon; a cutter element rotatably mounted to said shaft and having a bearing surface thereon that opposes and engages the bearing surface on said shaft, one of said surfaces having a circumferential groove therein; and a resilient packing ring positioned within said groove, with said packing ring, said groove and an opposing surface being sized such that upon assembly of the cutter element upon the shaft the cross-sectional thickness of said ring is compressed by not less than substantially ten percent of its thickness prior to assembly of the cutter element upon the shaft, said packing ring having a thickness which is not less than two percent of the drill bit diameter.

10. The apparatus defined by claim 9 wherein the packing ring is an O-ring.

11. Seal means for drill bit bearings, said drill bit bearing having the conventional pressure and nonpressure areas, said seal means comprising: a shaft rigidly secured to a drill bit body and having a bearing surface formed thereon; a cutter element rotatably mounted to said shaft and having a bearing surface thereon that engages the bearing surface on said shaft, one of said bearing surfaces having a circumferential packing ring groove therein; a resilient packing ring positioned within said packing ring groove; and one of said surfaces having a circumferential clearance groove that has a greater width than and which overlies the packing ring groove to provide an annular region around said packing ring groove where there is no metal-to-metal contact, said circumferential clearance

groove being formed primarily in the vicinity of the pressure area of the bearing surface of said shaft.

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MARTIN P. SCHWADRON, *Primary Examiner.*

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,397,928 August 20, 1968

Edward M. Galle

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

In the heading to the printed specification, lines 3 and 4, "Edward M. Galle, 814 Elton, Houston, Tex. 77034" should read -- Edward M. Galle, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex. --. Column 1, line 20, "exits" should read -- exists --; line 32, cancel "usually". Column 3, lines 18, 36 and 38, "to", each occurrence, should read -- by --; line 53, "surrounded" should read -- surrounding --. Column 4, line 34, "assemblied" should read -- assembled --; line 57, "effect" should read -- affect --. Column 6, line 29, "dimensins" should read -- dimensions --.

Signed and sealed this 10th day of February 1970.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents

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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SMITH INTERNATIONAL, INC., a California corporation,

Plaintiff,

v.

HUGHES TOOL COMPANY, a Delaware corporation,

Defendant.

No. CV 72-1231-RF

MEMORANDUM

The Court has found against the defendant and in favor of plaintiff, as reflected in the findings of fact and conclusions of law. A copy of the findings and conclusions is enclosed herewith for each counsel.

Plaintiff shall prepare and submit a proposed judgment in accordance with those findings and conclusions within five days hereof. Defendant will have five days thereafter to file any objections to the proposed judgment.

DATED: October __, 1979.

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ROBERT FIRTH
UNITED STATES DISTRICT JUDGE

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IN THE UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SMITH INTERNATIONAL, INC., a California corporation, Plaintiff, v. HUGHES TOOL COMPANY, a Delaware corporation, Defendant.	Civil Action No. 72-1231-RF ~~PLAINTIFF'S PROPOSED~~ FINDINGS OF FACT AND CONCLUSIONS OF LAW

On June 2, 1972, Smith International Inc. (Smith herein) filed a complaint in this Central District seeking a declaratory judgment that U.S. Patent No. 3,397,928 owned by defendant Hughes Tool Company (Hughes herein) is invalid. On or about November 15, 1973, Hughes filed a First Amended Answer which included a counterclaim charging Smith with infringement of the above-noted U.S. Patent No. 3,397,928 and, additionally, charging infringement of a second patent, U.S. Patent No. 3,476,195. Subsequently, on or about June 24, 1974, Hughes filed a Second Amended Answer charging that the alleged infringement of the two named patents was willful

and deliberate, and adding a demand that any award of damages for the alleged infringement be tripled.

Findings of Fact

1. Smith is a corporation organized and existing under the laws of the State of California and has its principal place of business in Irvine, California.

2. Hughes is a corporation organized and existing under the laws of the State of Delaware and has its principal place of business in Houston, Texas.

3. Both Patent No. 3,397,928 (referred to herein as the "seal patent") and Patent No. 3,478,195 (referred to herein as the "relief valve patent") name Edward M. Galle as inventor and are owned by Hughes. Each is directed to the incorporation of the "title" feature, i.e., a resilient packing ring, e.g., an O-ring, in the case of the seal patent and a relief valve in the case of the other patent, in rock bits, which are tools used in the drilling of oil wells.

4. No patent claims are presented in this litigation in which there is the combination of a relief valve and a resilient packing ring as claimed in the seal ~~in the~~ patent. Whatever the contribution of these features, namely, the pressure relief valve and, separately, the resilient packing ring as claimed in the seal patent, such must be separately assessed and treated.

The Seal Patent

5. Although the seal patent contains eleven claims, it is clear that the concept asserted to be patentable was

the sizing of the groove in which the ring is positioned and an opposing surface so that when the rock bit is assembled, the ring is "compressed by not less than substantially ten percent." The function of the ring is to provide a seal which seals the lubricant within the rock bit from the drilling fluid in which rock bits are rotated during drilling operations.

6. The groove for the ring and the opposing surface define a cavity which is termed a gland. To produce compression in the ring and therefore force it into sealing relationship with the surfaces of the gland, the gland ~~length~~ depth (typically designated L) is made less than the diametrical cross-section of the ring (typically designated W). The difference between these two dimensions (W-L) gives the amount of dimensional compression of the ring. Dividing that value by the uncompressed diametrical cross-section of the ring and multiplying by 100 expresses the compression as a percentage.

7. The terms "compression," "interference," and "squeeze" are interchangeably used in the art.

8. In a rock bit, a cutter is rotatably mounted on a stationary shaft. The seal formed between these elements is termed a dynamic or moving seal and, more specifically, a rotating or rotary seal. This is the nature of the seal to which the claims of the seal patent are directed.

9. The claimed subject matter of the seal patent is not limited to a specific bearing structure. The patent drawings illustrate the use of the rotary seal both in a

rock bit having a roller bearing and in a rock bit having a solid journal bearing. Both of these embodiments are encompassed by the claims of the seal patent.

10. The claimed subject matter of the seal is not limited to any specific speed of rotation of the cutter. During the long history of use of resilient packing rings as rotary seals, it came to be recognized that the rubbing between the peripheral surface of the resilient ring and the engaging gland surfaces produced friction which resulted in generation of heat. As will be more specifically treated below, it was found that the heat generated at lower surface speeds (the speed on the peripheral surface of the ring) was sufficiently low so that it did not affect the life of the resilient packing ring. At higher surface speeds, however, the heat generated could be enough to adversely affect the life of the seal.

11. The most widely used type of resilient packing ring is the O-ring. O-rings were widely used by the military and the air force during World War II and considerable research and development with O-rings took place during that period.

12. At the end of World War II, engineers who had worked with O-rings during the war entered industry and found that O-rings could be used in a great variety of industrial applications. Over the period from World War II to the early 1960's, there was extensive development of O-ring technology and uses. O-rings provided reliable, comparatively foolproof and relatively inexpensive seals.

13. There was widespread distribution of handbooks and catalogs by manufacturers of O-rings to explain to design engineers in industry the various applications of O-rings and to provide the design data for their installation. O-rings were extensively used in many industries and in many fields such as mechanics, hydraulics, and pneumatics.

14. The Parker Seal Company was one O-ring manufacturer which distributed catalogs for use by its own staff engineers and by tool and parts designers and engineers in industry. Its 1957 catalog is a comprehensive work providing gland dimensions for installation of O-rings and much additional data.

15. In the 1957 Parker catalog, recommendations were given for rotary seal applications. The catalog recommended that for surface speeds of from 0 to 200 sfm, the gland dimension data in Design Chart 8-1 should be used. This chart also listed the range of squeezes which would be obtained by using the gland dimensions recommended for each of five commonly used O-ring ~~line~~ cross sections.

16. A range of squeeze was shown in the Parker catalog for each of the listed O-ring cross-sections because there are tolerances in the making of O-rings and in the making of parts. Since it is economically impossible to make a part exactly to a dimension in production, design is based upon the mean between the tolerances. This is termed the design center.

17. The minimum squeeze is obtained by a calculation based upon the smallest O-ring cross-section (W)

within the tolerance range for a specified O-ring and the largest gland depth (L) within the tolerance range for the correspondingly specified gland depth. The maximum squeeze is obtained by using the largest O-ring cross-section and the smallest gland depth, each within its respective tolerance range. The design center squeeze is based upon the mean of the tolerances for the O-ring and the gland depth.

18. The O-ring cross-sections listed in Design Chart 8-1 of the 1957 Parker catalog include the O-ring cross-sections specifically referred to in the seal patent. The design center percentage squeezes recommended in that catalog for rotary O-ring seals in the speed range of from 0 to 200 fpm were in no case less than 10%.

19. Linear was another O-ring manufacturer which distributed in the 1950's a catalog describing O-ring applications. Linear set up a testing program following World War II to evaluate seals which included testing of O-rings in rotary seal applications. As a result of this work, Linear concluded that O-rings should not be recommended for peripheral speeds exceeding 350 fpm. This conclusion was based upon measurements of temperature rise versus rotational speed. While the rise was gradual up to the recommended speed limitations, the temperature rose abruptly above that speed.

20. The results of Linear's testing program information was included in a paper presented in 1950 by Mr. Swartz to, and published by, the National Conference on Industrial Hydraulics. The paper, Exhibit FW, stated at

FW-16: "A third type of O-ring installation which is becoming increasingly widely used is the oscillating or rotating shaft seal. . . . Against rotating shafts, the frictional heat generated is usually the limiting factor and O-Rings are not recommended where peripheral speeds exceed 350 F.P.M."

21. In catalogs issued by Linear during the 1950's there was included a table entitled "Rotating or Oscillating Seal Gland Dimensions For Use With Linear Series 11 O-Rings." The identical data was presented in a 1954 catalog of Crane Packing Company, a distributor for Linear O-rings. The table was prepared specifically to assist engineers who were using O-rings in rotating equipment. A footnote to the table limited the recommendations as to gland dimensions to speeds below 350 fpm. Based upon the gland dimensions provided through use of the catalog table for rotating seals, the design center percentage squeeze recommended by Linear for rotary O-ring seals operating at speeds up to 350 fpm was in no case less than 10%.

22. One of the major factors involved in the minimum squeeze for a rotating seal application, as Mr. Swartz testified, is the clearance between the rotating element and the stationary element. For a given minimum squeeze, there is recommended a maximum clearance. If a customer's application involves a clearance in excess of the maximum recommended clearance, then a new higher minimum squeeze is required.

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23. The need for increasing the minimum squeeze where there are greater than recommended clearances is illustrated and described in Section 5 of the 1951 Product Engineering article. There must be sufficient minimum squeeze so that if the shaft is rotating eccentrically there remains sufficient contact on the unloaded side to maintain a seal. If the minimum squeeze were not raised when the maximum recommended clearance is exceeded, there would be leakage because possible eccentric-loading or side-loading of the shaft could increase the squeeze on one side and decrease it to possibly zero on the other side.

24. The need for increasing minimum squeeze where there are greater than recommended clearances was and is part of the routine skills of designers and engineers and such need was known long prior to filing of the application for the seal patent.

25. Use of resilient packing ~~range~~ rings in rock bits is shown in a number of prior art patents, such as Patent No. 1,909,128-Scott which issued in 1933 and Patent No. 2,814,465-Green which issued in 1957. The use of an O-ring seal in rock bits is specifically shown in prior art patents, such as Patent No. 3,127,942-Neilsen which issued in 1964 to Smith and Patent No. 2,676,790-Turner which issued in 1954. Both Neilson and Turner qualitatively describe compression or squeezing of the O-ring to achieve sealing.

26. The foregoing fully demonstrates that the subject matter claimed in the seal patent was an old combination. These prior combinations of a resilient packing ring with the

other conventional elements of a rock bit, the ring being an O-ring in the case of the Neilson and Turner patents, were the same combination as was asserted to be the inventive concept in the seal patent, and these combinations were described as performing the very same function as described for the combination in the seal patent.

27. Together with the foregoing body of prior art, Turner Bit Company in the 1950's and Smith in 1961-1964 manufactured, used, and sold rock bits having O-ring seals as shown in the Turner and Neilson patents respectively. O-rings in these bits which were in public use and on sale were squeezed to the quantitative amounts later patented in the seal patent. These activities of Turner Bit and Smith will be more fully treated below. Nevertheless, these activities are as much a part of the prior art as are the patents and other materials already discussed.

28. The evidence clearly shows that most, if not substantially all, sealed bearing rock bits, both journal bearing and roller bearing, are run at speeds below 200 fpm. It appears to be the exception rather than the rule that such bits are run for any significant period of time in excess of 200 fpm. In any event, separately, there was, as part of the prior art, the publications of Linear teaching that squeezes in excess of 10% should be used in rotary seal applications for speeds up to 350 fpm.

29. The prosecution history of the seal patent reveals that Hughes submitted comparative bit data and recommendations of O-ring manufacturers in order to persuade the Patent Office

examiner to withdraw his rejection of the claims under consideration. These submittals did not, in some material respects, meet the applicant's uncompromising duty to make a full and fair disclosure of all facts which may affect the patentability of his invention.

30. As to the comparative bit data, it was not disclosed to the examiner that the bearing structures in the bits being compared were different. Unknown to the examiner, one bearing structure typically provided a bit life of twice that provided by the other bearing structure. The data was submitted to the Patent Office in a context that would have led the examiner to believe that the improved bit life was attributable solely to squeeze placed upon the O-ring. Further, Hughes had data, which it did not submit, showing that, when run with the same bearing structure, there was no significant difference in bit life whether the seal was an O-ring seal or a Belleville seal.

31. As to the recommendations of the O-ring manufacturers, Hughes did not make available to the examiner complete information as to the seals being compared. In addition, the Patent Office examiner was not informed by Hughes as to the speeds of rotation which were involved in the subject matter claimed in the seal patent. He was left, therefore, without any basis for recognizing that the instruction in the Parker catalog, "Use Chart 8-1" for speeds of from 0 to 200 fpm, was applicable to the subject matter before him.

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The Invalidity of the Seal Patent

32. The presumption of validity as to the seal patent is overcome because (a) invalidating prior art, such as the Linear catalogs and the 1951 Product Engineering article, were not before the examiner and (b) the failure by Hughes to make a fair and full disclosure materially prevented the examiner from properly interpreting the prior art which was before him.

33. The level of skill in the art of O-rings and in the art of rock bit design is high. Combined in the case of the seal patent are the high levels of skill found in both the O-ring art and the rock bit design art. It is against that combination of skills that the obviousness of squeezing an O-ring "not less than substantially ten percent" must be measured.

34. The seal patent is directed to those skilled in the O-ring art and in the rock bit design art. The evidence supports that the compressions, i. e., ten percent, fifteen percent, recited in the claims of the seal patent would be considered design center percentage squeeze by those skilled in these arts.

35. While Turner and Neilson left the quantitative amount of squeeze to the routine skills of the tool designers and engineers to which their patents were directed and to the catalogs and representatives of O-ring manufacturers, the recommendations and directions of the latter were to use in low speed rotary O-ring seal applications the same quantitative amount of squeeze as was asserted to be the basis for

patentability of the seal patent. There was no bona fide deterrent to applying the squeezes taught in publications such as Design ~~Court~~ Chart 8-1 or the table for rotating seals in the Linear catalog to the resilient packing ring in rock bits.

36. There was a total absence of any "unusual or surprising results" in applying a squeeze of "not less than substantially 10%" to the resilient packing ring in the old combinations of such a ring in a rock bit. No effect greater than the sum of the separate parts took place. There was no synergism whatsoever.

37. The application of a squeeze of "not less than substantially 10%" was no more than a routine expedient, established by prior practices, to insure that there was sufficient squeeze to provide a positive squeeze at all times taking into account the clearances and eccentricities which were known to be present in rock bits.

38. There is therefore no factual basis for establishing non-obviousness.

39. Exhibits CE through CI are components of a rock bit made by Turner Bit Company during the period 1948-1958. The bit has a cutter rotatably mounted on a solid-journal-bearing shaft secured to the bit body, the cutter having a bearing surface opposing and engaging the bearing surface of the shaft. A resilient packing-ring seal of the O-ring type is fitted in a groove in the cutter bearing surface to be radially compressed between the cutter and shaft as a rotary shaft seal. The O-ring had a nominal cross-sectional diameter of at least 0.139 inch before installation in the bit and was

1 sectional diameter when installed in the pit.
2
3 40. Insert pits of the type exemplified by Examples
4 CE Fifteen Ci were made and sold by the Insert Bit Company
5 during the period 1841-1861, and these pits were known and
6 used by others in the United States local brick to the making
7 of the invention claimed in the said patent. Claims 1-11 of
8 the said patent define an invention directed to the same
9 broblem and solution embodied in the brior-art Insert pits,
10 and the claimed invention does not present any unusual or
11 surprising result. The Insert pits anticipate the invention
12 claimed in the said patent, and any differences between the
13 Insert pits and the claimed invention would have been obvious
14 to one of ordinary skill in the art when the claimed invention
15 was made.
16 41. Smith made and sold about 57 rock pits during the
17 period 1861-1864 in the course of completing design evalua-
18 tion programs ER803, 608, 418, 828, and 388. These pits used
19 conventional O-ring seals and also composite O-ring seals
20 corresponding to the seal styles shown in the seal patent.
21 The seals as installed in the Smith pits were grooved in
22 excess of 10 percent of the cross-section diameter of the
23 seals prior to installation. Another ER program (ER831) dur-
24 ing 1861-1864 tested about nine pits using O-rings grooved
25 to a design-center value of about 35 percent. Smith conclude
26 that a 35-percent groove was excessive, and subsequent pro-
27 jects completed by early 1864 (ER824 and 388) successfully
28 employed O-ring grooves based on design-center values of 13.

and 12.67 percent. These 43 problems were all completed and the pits were used to drill oil wells more often than one year before the drill pad date (and before any earlier date of invention) according to the best patent.

43. The very nature of the subject matter claimed, namely, components subject to tolerances, and the uncertainty introduced by the word "approximately" in the claimed subject matter of the best patent tells to notify the public with a reasonable certainty of the drilling time between what and what does not.

The Real-Value Patent and Its Invalidity

44. The real-value patent is directed to use of conventional real value in an optimized conventional rock bit to vent excessive stress in the injection system so vent associated with the bit pedestal. This arrangement is directed at the ultimate goal of maximized pedestal life by preventing premature failure of pressure-sensitive components in the injection system. The patent acknowledges that the developed value (use of a relief valve) was simple, and mean of a solution (use of a relief valve) was simple, and instead characterizes the invention as recognition of a problem -- namely the recognition that pressure-sensitive components in the injection system could be damaged by excessive stress arising from injection pedestal occurring while the pit was drilled rock at the bottom of a hole being bored. U.S. Patent 5,303,204-Parks issued in 1994, and shows a rock bit with rotatably mounted cutters. A lubrication-

supported pin is sealed by an O-ring shaft seal. Grease is admitted to the bearing chamber a pressure control valve (piston 15 and associated parts in the bearing drawing) which functions as a compensator to maintain grease pressure in the bearing space above the pressure of drilling fluid in the annulus outside the pin. A passage extends from the annulus, and a relief valve positioned in this passage releases excessive pressure which may develop in the bearing space when the pin is drilling a well. The relief valve and pressure control valve are vented through the same passage to drilling fluid in the annulus.

48. The Parks patent discloses that an excessive pressure may develop within the bearing space of a rock pit when the pit is drilling "on bottom" due to heating of the bearing lubricant. The patent also teaches that this excessive pressure, unless relieved, may damage components of the lubrication system and thereby shorten bearing life, leading to a premature failure of the pit. The solution disclosed in the patent is to insert a relief valve in the bearing space to place excessively pressurized lubricant to the outside of the pit. The Parks patent discloses the same problem and the same solution described and claimed in the relief-valve patent.

49. Relief valves were used in rock pits made and received by Smith in the early 1960's, more than one year before the filing date (or any earlier date of invention) accorded the relief-valve patent. The valves in the Smith pits were a low-pressure type designed to bleed excessively pressurized lubricant in the pit bearings to the outside of the pit.

Belleville seals were used to seal the pestle space of rock bits commercialized and shown in prior-art patents more than one year before the filing date (or the earlier date of invention) according the relief-valve patent. Belleville seals function as low-pressure relief valves to bleed excessively pressurized lubricant in the pin pestle to the outside of the pin. The prior-art patents show rock bits incorporating Belleville seals and flexible compensators which are vented to drilling-fluid region at substantially the same fluid pressures.

14. The claims of the relief-valve patent define a combination of parts constituting a rock-bit drilling tool. The only alleged difference between the claimed combination and prior-art rock bits is the addition of a convention relief valve. The patent Office examiner who examined the application to the relief valve patent did not cite or show fions leading to the relief valve patent to use of a low-pressure sweetness of the prior art relating to bleed excessively pressurized lubricant from the pestle space of a rock bit. This alleged difference is clearly disclosed in the non-cited prior art, and the minor differences between the claimed invention and the prior art would have been operous at the time the invention was made to one of ordinary skill in the rock-bit art.

18. The relief-valve patent is not entitled to a presumption of validity because the prior art on which the patent was not before the patent Office at the time of invalid was examination to the application leading to the patent.

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Conclusions of Law

1. Any differences between the subject matter of claims 1-11 of the real patent and the prior art were obvious at the time the invention was made, and the claims are invalid, 35 U.S.C. 103.

2. Claims 1-11 of the real patent defining subject matter manufactured by the prior art, and the claims are invalid, 35 U.S.C. 102(a) and (b).

3. Number failure to make a full and fair disclosure to the patent office constituted fraud on the patent office and makes the claims of the real patent invalid. Monolith Portland Midwest Co. v. Kaiser Aluminum & Chemical Corp., 230 F.2d 850, 855, 858 (9th Cir. 1956).

4. The claims of the real patent fail to particularly point out and distinctly claim the subject matter which was regarded as invention and are therefore invalid, 35 U.S.C. 112.

5. The subject matter of the real-view patent is manufactured by the prior art, and all claims of the patent are invalid, 35 U.S.C. 102(a) and (b).

6. Any differences between the subject matter of claims 1-11 of the real-view patent and the prior art were obvious at the time the invention was made, and the claims are invalid, 35 U.S.C. 103.

7. Secondary consideration such as commercial success and alleged copying, even if found to exist, which is not the case here, cannot lend validity to either the real patent or the real-view patent where, as here, the lack of patentable subject matter is clearly shown.

8. ALL claims of U.S. Reissue Patent 35,252, entitled assigned by Hydro Edstrand Smith in this action, have been held invalid by a previously entered consent judgment.

9. With respect to the said patent, this is an exceptional case justifying an award of reasonable attorney fees to defendant, 35 U.S.C. 285, Monolith Portland Midwest Co. v. Kaiser Aluminum & Chemical Corp., 704 F.2d 388, 394 (9th Cir. 1983).

Plaintiff is entitled to judgment in conformity with the foregoing findings of fact and conclusions of law.

Dated this 21 day of Oct, 1984.

United States District Judge

Presented By:

Christie, Parker & Hale

Andrew J. Belanzky

Russell R. Palmer, Jr.

CERTIFICATE OF SERVICE

The undersigned attorney for plaintiff hereby certifies that service of the foregoing PLAINTIFF'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW was made on defendant by mailing copies, postage prepaid, on March 13, 1978 to:

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No. 84-1995

Supreme Court, U.S.
FILED
JUL 25 1985
ALEXANDER L. STEVAS

IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

SMITH INTERNATIONAL, INC.,

Petitioner,

v.

HUGHES TOOL COMPANY

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

RESPONDENT'S BRIEF IN OPPOSITION

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COUNTERSTATEMENT OF THE QUESTIONS PRESENTED

1. Were the courts below correct in applying the doctrine of law of the case to foreclose renewal of an admitted infringer's contention that a patent, held valid and enforceable by a final judgment of the Ninth Circuit Court of Appeals, was in fact void and unenforceable by reason of alleged fraud by the patentee on the Patent Office, where the same ground was previously asserted by the same infringer before the trial court and the Ninth Circuit as a basis for holding the patent in suit invalid?

2. Is it within a district court's discretion to use by analogy the "newly discovered" evidence standard of Rule 60(b)(2), Fed. R. Civ. P., in determining whether, factually, there was "substantially different" evidence justifying an exception to the law of the case doctrine?

RULE 28 STATEMENT

Respondent, Hughes Tool Company has the following affiliates, other than wholly-owned subsidiaries: Hughes Tool Company, C.A., Venezuela; Hughes WKM do Brasil Equipamentos Industriais LTDA, Brazil; Alea Company, Limited, Nigeria; APSCO (Asia) Ptd. Limited, Singapore; Associated Petroleum Supply (Hong Kong) Limited; Brown-Foraid Oil Tools U.A.E., Ltd., Bermuda; and Brown Oil Tools de France S.A.R.L., France.

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

SMITH INTERNATIONAL, INC.,

Petitioner,

v.

HUGHES TOOL COMPANY

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

RESPONDENT'S BRIEF IN OPPOSITION

STATEMENT OF THE CASE

This is a patent infringement case. The petition seeks review of the affirmance, by the United States Court of Appeals for the Federal Circuit, of the successive denials by the district court of motions to dissolve an injunction against further patent infringement. The injunction had been entered in accordance with the mandate of the Federal Circuit in an earlier appeal.

The Petitioner, Smith International, Inc. brought this suit in 1972 as a declaratory judgment seeking to invalidate Hughes Tool Company's patent on an invention for an oil well rock bit. In the pretrial pleadings Smith admitted its infringement of the patent but alleged that the patent was invalid, asserting the three principal patent validity defenses: lack of novelty (35 U.S.C. § 102); absence of "non-obviousness" (35 U.S.C. § 103); and failure to comport with statutory disclosure requirements (35 U.S.C. § 112). Smith also pleaded invalidity on the grounds that the patent was obtained by fraud on the Patent Office. Discovery and trial were had on all four defenses. In

1979, two years after the trial, the District Court adopted verbatim all of Smith's proposed findings of fact and conclusions of law except two conclusions. It rejected the invalidity defense of fraud in the Patent Office and the prayer for an award of attorney fees.

Hughes appealed the holding of invalidity to the Ninth Circuit Court of Appeals. Smith contended that the patent was invalid on the three grounds found by the District Court, as well as on the rejected ground of fraud on the Patent Office. It urged in its brief:

> While the district court did not hold the seal ('928) patent invalid on the basis of those findings. . . , it is submitted that this Court should do so on the separate ground of fraud on the Patent Office. (P 4; Brief For Appellee at 45).

The Ninth Circuit reversed, explicitly declared the patent to be valid, and "remanded for further proceedings on the counterclaim" (A 40; 664 F.2d at 1377). In holding the patent valid, there was no specific discussion of the invalidity defense of fraud on the Patent Office in the court's opinion. Subsequently Smith filed a Petition for Rehearing to the Ninth Circuit and a Petition for Certiorari to this Court, both of which were denied. Smith did not mention the fraud defense or its treatment by the Ninth Circuit in either petition.

On remand, Hughes moved for an injunction against further infringement. Smith then contended for the first time that it had not infringed. It also argued that there had been no determination of infringement, and, in any event, the scope of its admission of infringement was too general to meet the specificity requirements for injunctive relief under Federal Rule of Civil Procedure 65(d). The district court specifically rejected Smith's argument that infringement had not been determined but agreed that the specificity requirements of Rule 65(d) had not been met and accordingly denied the injunction. Smith did not raise the fraud issue.

Hughes appealed to the newly created Federal Circuit. It reversed. Weighing heavily in its decision were the facts that "the validity of the Hughes patents has been adjudicated by a competent appellate court, which we assume considered all possible grounds for invalidating the patents, and yet rejected them all" (A 61; 718 F.2d at 1579) and that "the Ninth Circuit Court's decision removed any questions about the validity and enforceability of the patents". (A 62; 718 F.2d at 1580). As below, Smith did not raise the fraud issue. The Federal Circuit mandated the entry of an injunction. (A 66; 718 F.2d at 1582).

On remand, the District Court entered the injunction. Two months later, Smith moved to dissolve it, reasserting fraud in the Patent Office and contending that the Ninth Circuit had not decided that issue. The district court denied the motion holding that the Ninth Circuit, in deciding the patent was valid, had by necessary implication considered and rejected the fraud defense. It further held that Smith had not presented any new evidence to justify departing from the mandates of the Ninth and Federal Circuits. The Court then concluded:

> At some point in this lawsuit the seemingly endless processing of legal argument to achieve a deadlock must stop. . . . As Justice Story once observed, lawsuits should not be immortal while men are mortal. *Ocean Ins. Co. v. Fields*, 18 F.Cas. 532, 539 (No. 10,406) (C.C.D. Mass. 1841). (A 74-75).

Smith noticed an appeal, but while it was pending, filed another motion in the district court again seeking to dissolve the injunction. In this motion, Smith contended that it had new evidence of fraud in the Patent Office. After briefing and two days of testimony, the district court denied the motion concluding:

> I think the decision of the Ninth Circuit . . . as interpreted by the Federal Circuit is that this issue is foreclosed and what you have got doesn't amount to newly discovered evidence within the analogy of Rule 60 . . . (A 80).

Smith filed another appeal which was subsequently consolidated with the pending appeal from the denial of the first dissolution motion.

The Federal Circuit affirmed both orders. In its decision the Court first observed that it is doubtful whether the district court had any authority to dissolve the injunction entered in compliance with the mandate, but in order to expedite this protracted litigation, it pretermitted that issue and decided the appeal on the merits. It held that the doctrine of law of the case applies unless one of three "exceptional circumstances" exists: "the evidence on a subsequent trial was substantially different, controlling authority has since made a contrary decision of the law applicable to such issues, or the decision was clearly erroneous and would work a manifest injustice." (A 7; 759 F.2d at 1576, *citing, Central Soya v. Geo. A. Hormel & Company,* 723 F.2d 1573, 1580 (Fed. Cir. 1983)).

Each of the issues now raised by Smith in its Petition was raised in and answered by the Federal Circuit.

To Smith's suggestion that an allegation of fraud in the Patent Office should be an exception to the law of the case doctrine the Court responded:

> We reject the suggestion. The law-of-the-case doctrine rests upon weighty considerations of sound judicial administration, and its application should not and cannot depend upon the nature of the issue that a party seeks to relitigate. (A 11; 759 F.2d at 1578).

On the question of whether the fraud issue had been decided by clear implication, the court held that it had:

> In order to hold the patent valid, as it did, the Ninth Circuit necessarily must have rejected all the grounds upon which Smith challenged validity and sought to uphold the contrary decision of the district court. One of those grounds was that in obtaining the patent Hughes committed fraud before the Patent Office. Although the law-of-the-case doctrine "applies only to issues that were

> decided in the former proceeding but not to questions which might have been decided but were not," it " 'comprehends things *decided by necessary implication* as well as those decided explicitly.' *Morrow v. Dillard*, 580 F.2d 1284, 1290 (5th Cir., 1978)." (A 8; 759 F.2d at 1577).

Finally, the Court rejected Smith's argument that it was improper to apply by analogy the "new evidence" standard of Rule 60(b) in determining whether there were "substantially different evidence" justifying an exception to the law of the case doctrine.

> . . . The law-of-the-case doctrine is designed to 'provide finality to judicial decisions.' *Supra*, p. 1576. It thus serves the same objective as the 'newly discovered' requirement in Rule 60(b)(2).
>
> Smith has offered no convincing policy reasons for rejecting the district court's view of the requirements of the 'substantially different' evidence exception to the law of the case, and we cannot discern any. . . . In this case, Smith is seeking to reopen factual issues finally laid to rest by the Ninth Circuit in 1982 on the basis of evidence it could have discovered with due diligence at least by the time of trial of this case in 1977. The district court was fully justified in rejecting this attempt. (A 13; 759 F.2d at 1579).

On August 20 of this year the seventeen year term of the '928 patent expires.

REASONS WHY THE WRIT SHOULD BE DENIED

The only thing exceptional about the Petition is Smith's persistence in attempting to relitigate issues long since tried and decided.

No issue of general importance or interest is presented. Indeed the only issue raised is whether this litigant, under the particular facts of this case, should be given a second opportunity to attack the validity of Hughes '928 patent. That issue has been thoroughly reviewed and decided by the Federal Circuit Court of Appeals and two district court judges. No purpose, other than Smith's, would be served by further review by this Court. Nor is there any conflict between the decision below and decisions of this Court or any of the courts of appeals.

The first reason advanced (p. 11) by Smith for granting a writ of certiorari is that "the Court below improperly held that the Ninth Circuit's decision was law of the case on fraud. . . ." On its face, this is a purely factual issue, i.e., did the Ninth Circuit, or did it not, decide the fraud issue in *Smith v. Hughes*? Moreover, the court below was clearly correct both in its approach to answering that question and in the answer itself. It asked: could the Ninth Circuit have held the patent valid without deciding the fraud issue adversely to Smith? It answered: "the Ninth Circuit necessarily must have rejected all grounds upon which Smith challenged validity and sought to uphold the contrary decision of the district court," (A 8; 759 F.2d at 1577), and one of those grounds was fraud. In short, it was not possible to properly hold the patent valid without deciding and rejecting the fraud defense.

Nothing in *Mutual Life Insurance Co. v. Hill,* 193 U.S. 551 (1904) is to the contrary. As the court below pointed out, (A 9; 759 F. 2d at 1577) "All the Supreme Court stated was that 'a judgment of reversal is not necessarily an adjudication by the appellate court of any other than the questions in terms

discussed and decided.' " Other questions may or may not have been decided depending on the circumstances. Here the circumstances, the holding of validity, by clear implication decided the fraud issue. Moreover, the Ninth Circuit remanded the case solely for purposes of determining the scope of the relief.

Smith asserts (pp. 13-14) that there is something unclear about the Ninth Circuit's holding that the '928 patent is "valid", requiring the aid of a "soothsayer or psychiatrist" to unravel what was meant. In fact there is no mystery. As the court below observed, in responding to this same argument,

> Although the language the Ninth Circuit used may have been infelicitous, its meaning was clear. By reversing the district court's determination of invalidity and remanding for further proceedings on the reinstated counterclaim, the Ninth Circuit, as we stated in Smith II, "removed any question about the validity and enforceability of the patent." (A 9; 759 F.2d at 1577).

For those uninitiated in the niceties of the patent law, the Federal Circuit has recently reproved the lower courts against declaring a patent "valid," suggesting that a more accurate declaration is that the patent has not been proven invalid. The distinction was first pronounced and explained in 1983 in *Environmental Designs, Ltd. v. Union Oil Company of California,* 713 F.2d 693, 699 (Footnote 9) (Fed. Cir. 1983),

> It is not necessary that a district court hold a patent valid. In an appropriate case, it is necessary to hold only that the challenger of a patent's validity failed to carry his burden of proving invalidity. 35 U.S.C. § 282. The result is the same, but the latter holding more accurately dramatizes that it, like all holdings, is based on the record of the case at hand. The latter holding also avoids concern that a patent held valid may be held invalid on a different record in another case.

There has never been any confusion as what the Ninth Circuit meant or what it did. It very simply ruled upon and rejected each of Smith's defenses to the validity of the patent.

Smith next contends that the Federal Circuit should have reversed because the district court had applied by analogy the "newly discovered evidence" standard of Rule 60(b)(2) in determining whether Smith had presented "substantially different evidence" sufficient to bar the application of the doctrine of law of the case. Smith asserts that the approach of the court below was improper but neither cites authority to the contrary nor suggests what a proper approach would be. There is no showing of a conflict between the decision of the court below and other courts. Nor does Smith offer any contrary suggestion as to what the criterion or standard for determining "substantially different evidence" is or what it ought to be.

At best Smith's argument is that Rule 60(b)(2) is not binding except where there is a "final judgment." But the court below did not view the application of the rule as mandatory, rather it was viewed as a serviceable guideline in analyzing whether any "substantially different evidence" was proffered. The analogy to Rule 60 is a sound one. As the court below observed, the objective of each of Rule 60 and the law of the case doctrine is the same—"to provide finality to judicial decisions." (A 7 and 13; 759 F.2d at 1576 and 1579).

The analogy is even more compelling in patent cases. There the case is deemed final for purposes of an appeal after liability is determined but before damages are tried. Under the longstanding statutory provisions, an appeal is allowed in patent infringement cases which are "final except for an accounting." 28 USC § 1292(c)(2).

Finally, Smith argues that the public interest in the legitimacy of patents is so overwhelming as to bar the doctrine of the law of the case where there is an allegation of fraud on the Patent Office. Again Smith shows no conflict between the decisions below and those of other courts. It asks this court to plow new ground untouched by the lower courts.

Smith's reliance on *Mercoid Corp. v. Mid-Continent Investment Co.*, 320 U.S. 661 (1944) is misplaced. There the patentee was seeking to enjoin acts beyond the legitimate scope of the patent. The Supreme Court refused to participate and thereby place its "imprimatur on [such] a scheme." *Id.* at 670. To do so ". . . would aid in the consummation of a conspiracy to expand a patent beyond its legitimate scope. But patentees and licensees cannot secure aid from the court to bring such an event to pass 'unless it is in accordance with policy to grant that help.' " *Id.*

Here, the courts below have heard, decided and rejected Smith's fraud allegation and are simply declining to reopen these factual issues. The Petition should be denied.

Respectfully submitted,

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by _____

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No. 84-1995

IN THE

Supreme Court of the United States

OCTOBER TERM, 1984

SMITH INTERNATIONAL, INC.,

Petitioner,

v.

HUGHES TOOL COMPANY,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITIONER'S REPLY BRIEF

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PETITIONER'S REPLY BRIEF

Because the Brief in Opposition presents only the same weary arguments on which Hughes has relied throughout the later stages of this litigation, there is nothing that is properly the subject of a reply under Rule 22.5, although it is worthy of note that in its Counterstatement of the Questions Presented, Hughes puts Question 1 in terms of applying law of the case to grounds "previously asserted" rather than to things previously decided. This comes very close to being an admission that the Ninth Circuit never decided the issue of fraud on the Patent Office.

It seems desirable, however, and fully within the spirit of Rules 22.5 and 22.6 to apprise the Court that there is now pending in this Court a petition for certiorari, *Wilco Marsh Buggies and Draglines, Inc.* v. *Kori Corporation*, No. 85-266 (Petition filed August 16, 1985), in which review is sought of a decision of the Court of Appeals for the Federal Circuit reported at 761 F.2d 649. The Questions Presented by the *Wilco* petition are similar to those presented in this case. This shows that the proper application of the doctrine of law of the case is an issue of general importance and is not confined, as the Brief in Opposition suggests, to "the particular facts of this case." It also suggests that the Court may wish to defer consideration of this

petition until the *Wilco* petition is ripe for disposition, so that the Court may see the two cases together and be made aware of the full significance of the problem.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that three (3) true and accurate copies of the present Petitioner's Reply Brief have been transmitted to opposing counsel by first class mail on this ..... day of August, 1985.

.....

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